# *'Stress and sex: a complicated relationship'*

## Declining sexual functioning as a predictor for attritional stress and fatigue (ASF), resilience injury and maladaptive behaviours in a sample of British Army soldiers

Thesis submitted in accordance with the requirements of the
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# DECLARATION

"The material being presented for examination is my own work and has not been submitted for an award of this or another HEI except in minor particulars which are explicitly noted in the body of the thesis. Where research pertaining to the thesis was undertaken collaboratively, the nature and extent of my individual contribution has been made explicit."

***17th October 2021***

# ABSTRACT


***Background***

With high-tempo work, frequent separation and operational commitments, military personnel are at greater risk than most of developing a broad range of mental health concerns. Whether at war or in peacetime, soldiers are trained to be ready for combat. Such conditioning is responsible for teaching soldiers how to override their flight or fight response; to run towards danger when human instinct seeks to run away. So, whether soldiers are engaged in combat or training for readiness, the destabilising impact of overriding innate biological functions can impact on how a soldier recognises and manages stress. Stress is known to contribute to a number of physical and psychological functions that impact on sexual desire and performance, offering sexual functioning as a potential marker for resilience injury and wider mental health concerns.

***Aims & Objectives***

Psychological support for intimate relationships is particularly vital for soldiers and their partners and may influence recovery rates from the unique mental demands of the military. This study sought to understand if declining sexual functioning could be an early predictor of problematic stress and maladaptive behaviours. It aimed to define clear at-risk groups for increased stress to help clinicians target assessment for those most susceptible to resilience overwhelm and mental health concerns.

***Research questions***

The study focused on 6 main research questions related to stress, sexual functioning, online sexual activity (OSA) and compulsive sexual behaviour (CSB). Results hoped to demonstrate the correlation between stress and sexual function and to define areas of additive stress that may impact on wellbeing. Clinical aims sought to highlight at-risk groups and protective factors to support psychoeducation, assessment protocols and treatment pathways.

### *Method*

A mixed-methods approach allowed for the collection of quantitative statistical data via a scored and validated survey providing correlation information on the four main variables: stress, sexual functioning, online sexual activity and compulsive sexual behaviours. A qualitative component collected personal statements, observations and remarks to provide context for the statistical results. With equal priority, this created a snapshot of soldier experience in relation to stress and sex which could help the identification of those soldiers at greater risk of psychological distress.

The study was primarily underpinned by the theoretical framework of Bancroft and Janssen's Dual Control Model. This model centres on the balance between an individual's inhibitory and excitatory processes in the central nervous system. With particular relevance to this study and soldier behaviour, the Dual Control Model considers how excitation and inhibition are impacted by stress and how individual response may impact on sexual behaviour. Where inhibition is elevated, some may experience difficulties with sexual interaction related to performance anxiety for example and where excitation is increased, individuals may feel less restricted and may be willing to take more sexual risks.

### *Results*

Results demonstrated a clear link between increased stress and declining sexual function offering psychosexual assessment as a useful diagnostic tool for psychological distress. Through statistical analysis, 7 groups were identified as most at risk of resilience overwhelm and poor stress appraisal with declining sexual functioning.

These groups included soldiers who lived alone, those who lived overseas with their partners, Other Ranks aged 26-30 years old, Non-Commissioned Officers aged 26-30 years old, Commissioned Officers aged over 40 years, soldiers that had served between 1-5 years and those personnel who had served over 20 years. Soldiers in more than one of these 7 groups were likely to experience the highest levels of stress and declining sexual functioning, with up to 83% of sexual function variance attributed to stress.

Within this study, predictive factors were categorised from personal narratives. At-risk soldiers were identified as either being exposed to greater disconnection or isolation, currently experiencing a life stage transition or within a period of increased occupational demand. Soldiers currently at relationship pressure points such as starting or ending an intimate relationship did not demonstrate a significance correlation between elevated stress and declining sexual function.

Over 85% of soldiers admit to using the internet for sexual activity; however, the majority were at levels that were considered to be low risk. Personnel reported preferring to seek out human connection. Increased OSA was not correlated with loss of desire but it was strongly associated with a decline in sexual satisfaction. Compulsive sexual behaviour was not generally problematic. Results demonstrated that soldiers in this study were more likely to have increased sexual inhibition resulting in sexual difficulties rather than elevated excitation leading to risk taking behaviour.

There were marked differences between male and female soldiers including the experience of stress, sexual function and online sexual activity, suggesting that psychoeducation and healthcare assessment should be appropriately targeted with the consideration of sex-specific interventions. More research on the psychological and physiological differences between male and female soldiers is urged.

***Implications for practice***

Whilst poor sexual functioning can be influenced by many factors, this study has concluded that sexual difficulties are positively correlated with increased stress within the British Army. Therefore, questions on sexual functioning could offer an important measure of physical, cognitive and emotional health. Psychosexual training would enable those clinicians that support at-risk soldiers presenting with stress symptoms to explore sexual functioning and behaviour as part of their patient wellbeing assessment.

Soldiers could benefit from greater awareness of how personal agency and control can diminish the harmful effects of stress, whilst leaders should continue to be mindful of their direct impact on soldier wellbeing. Relationships form part of systemic resilience and contribute to soldier wellbeing, happiness and key life decisions. Army policy makers should be aware of the implications of soldier

overwhelm and relationship strain in relation to financial, operational and retention decisions

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# Acknowledgements

***In memory of Dot Prentice***

*In memory of a truly committed educator, grandmother and friend.*
*For encouraging me to start this study, but sadly never seeing it end.*

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# Abbreviations

| | |
|---|---|
| AFF | Army Families Federation |
| ANOVA | Analysis of variance |
| ASAC | Army Scientific Assessment Committee |
| ASF | Attritional stress & fatigue (ASF) |
| BOS | Bristol Online Survey |
| CR | Critical Realism |
| CSB | Compulsive Sexual Behaviour |
| DoD | Department of Defence |
| DSM-5 | Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition |
| ED | Erectile Dysfunction |
| FSD | Female sexual dysfunction |
| FTTTS | Full-Time Trade-Trained Strength |
| GPPPD | Genito Pelvic Pain Penetration Disorders |
| HIC | High-Intensity Conflict |
| HIT | High-Intensity Training |
| ICD-10 | International Classification of Diseases, Tenth Revision |
| IED | Improvised Explosive Device |
| IOSB | Interest in Online Sexual Behaviour |
| ISST | Internet Screening Test |
| ISST | Internet Sex Screening Test |
| JHQ | Joint Headquarters |
| JPA | Joint Personnel Administration |
| JSP | Joint Services Publication |
| KCMHR | King's Centre for Military Health Research |
| LGBT+ | Lesbian, Gay, Bisexual, Transgender/Transsexual plus |
| LIC | Low Intensity Conflict |
| MHFA | Mental Health First Aid |
| MoD | Ministry of Defence |
| MODREC | Ministry of Defence Research Ethics Committee |
| NASTAL-SF | National Surveys of Sexual Attitudes and lifestyles: Sexual Functioning |

| | |
|---|---|
| NATSAL | National Survey of Sexual Attitudes and Lifestyles |
| NCA | National Crime Agency |
| NCO | Non-Commission Officer (refer to Figure 5) |
| NOOB | Nights Out of Bed |
| OEF | Operation Enduring Freedom |
| OFFR | Commissioned Officer (refer to Figure 5) |
| OIF | Operation Iraqi Freedom |
| OR | Other Rank (refer to Figure 5) |
| OSA | Online Sexual Activity |
| OSB-I | Online Sexual Behaviour-Isolated |
| OSB-S | Online Sexual Behaviour-Social |
| OSC | Online Sexual Compulsivity |
| OSS | Online Sexual Spending |
| PPMCC | Pearson's Product Moment Correlation Coefficient |
| PSS | Perceived Stress Scale |
| PST | Psychosexual Therapy |
| PTSD | Post-Traumatic Stress Disorder |
| QoL | Quality of Life |
| SCS | Sexual Compulsivity Scale |
| SD | Standard Deviation |
| SHA(A) | Senior Health Advisor (Army) |
| SLA | Single Living Accommodation |
| SME | Subject Matter Experts |
| SPSS | Statistical Package for the Social Sciences |
| STI | Sexually Transmitted Infection |
| TA | Thematic Analysis |
| TMSI | Technology-Mediated Sexual Interaction |
| UK | United Kingdom |
| UoC | University of Chester |
| USA | United States of America |
| VR | Virtual Reality |

# Terminology

| Term | Definition | Author |
|---|---|---|
| Attritional Stress & Fatigue (ASF) | The clinically defined outcome of prolonged exposure to routine global stressors: resulting in resilience injury, emotional deregulation and physical symptomology. | *Defined from results of this research study* |
| Compulsive sexual behaviour (CSB) | Compulsive sexual behaviour (CSB) is a putative clinical syndrome characterised by the experience of sexual urges, sexually arousing fantasies, and sexual behaviours that are recurrent, intense, and a distressful interference in one's daily life. | *Miner, Coleman, Center, Ross, and Rosser (2007)* |
| Coping | The cognitive and behavioural efforts to master, reduce, or tolerate the demands that are created by a stressful event. | *Lazarus and Folkman (1984)* |
| Culture | Culture is a product of the social environment and includes a shared sense of values, norms, ideas, symbols, and meanings. | *Redmond et al. (2015)* |
| Gender | Gender refers to the cultural differences expected (by society / culture) of men and women according to their sex. | *McLeod (2014)* |
| Hypersexual behaviour | Hypersexual Disorder (HD) as a repetitive and intense preoccupation with sexual fantasies, urges, and behaviours, leading to adverse consequences and clinically significant distress or impairment in social, occupational, or other important areas of functioning. | *American Psychiatric Association (2013)* |

| | | |
|---|---|---|
| Intradyadic relationship | For the purpose of this research, intradyadic refers to an individual's established romantic relationship and excludes extra-marital affairs, pornography, escorts, chat rooms or casual relationships, which are classed as extradyadic. | *Adapted from,* *Hilpert, Kuhn, Anderegg, and Bodenmann (2015)* |
| Online sexual activity (OSA) | OSA is the use of the Internet for any activity (text, audio, or graphics) that involves sexuality. This includes recreation, entertainment, exploration, information about sexual problems and concerns, education, purchasing of sexual materials, the search for sexual partners, sexual arousal, downloading and sharing of erotica, sexually explicit discussions etc. | *Cooper, Morahan-Martin, Mathy, and Maheu (2002)* |
| Resilience | The process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress — such as family and relationship problems, serious health problems, or workplace and financial stressors. | *American Psychiatric Association (2013)* |
| Sex | Sex refers to biological differences between males and females. For example, chromosomes (female XX, male XY), reproductive organs (ovaries, testes), hormones (oestrogen, testosterone). | *McLeod (2014)* |
| Sexual difficulties | Pathophysiological and psychological problems interfering with the body's ability to engage and participate in sexual activity. *Results for this study have been classified as difficulties and not dysfunction as data collected by the research is self-reported and cannot be claimed as a clinical diagnosis.* | *Helmer et al. (2015)* |
| Sexual functioning | An individual's physical, psychosocial and emotional responses to certain phases of the | *Masters & Johnson (1966)* |

| | | |
|---|---|---|
| | sexual response cycle; in particular, desire, arousal and orgasm. | |
| Stress | An environmental demand that exceeds the natural regulatory capacity. | *Koolhaas et al. (2011)* |
| Tempo | In a military context, the term tempo is the rate of speed and rhythm of military operations (pace). | *US Army Doctrinal Publication 3-90* |

# 1 Introduction

When I was training to be a Psychosexual Therapist, my tutor frivolously declared to the class 'remember, you cannot run with an erection'. He was not simply referring to the cremasteric reflex, the elevation of the testicles to prevent injury, (Harvard Medical School, 2011), but explaining that the human body's response to stress and sexual functioning are complex and interwoven.

As the sympathetic nervous system responds to threat, hormonal changes are triggered that fundamentally alter the current physiological and emotional state, moving individuals out of the feed and breed state and activating the fight or flight response. Many people will have a healthy appraisal and coping system which is resilient enough to manage most threats as they occur. However, when pressure is perceived to be unrelenting, the body moves into a continual state of alert. This can lead to the development of chronic physical and mental health concerns (Koolhaas et al., 2011; Meston & Lorenz, 2013).

The impact of perpetual stress directly impacts on healthy sexual functioning. The pituitary and hypothalamus glands regulate the body's production of both the stress and sex hormones. The overproduction of the stress hormone cortisol can directly inhibit the hormone production required for normal sexual engagement. A prolonged hormone imbalance of this nature can potentially lead to longer-term sexual functioning concerns and more complex mood disorders (Hamilton & Meston, 2013; Meston & Lorenz, 2013).

This study aimed to review the relationship between stress and sex in a sample of British Army personnel to establish whether early detection of sexual difficulties could act as a marker for wider psychological distress. Soldiers are known to manage multiple stressors alongside a highly intense training regime that promotes pushing through the natural stress response, forcing themselves to run forward when the natural instinct is to retreat or freeze. Soldiers could therefore be more at risk of developing a maladaptive stress response leading to physical, cognitive and emotional problems outside of combat-related posttraumatic stress disorders (PTSD). This research is intended to investigate

current routine stress levels among soldiers and how they relate to sexual functioning and behaviour.

## 1.1 Background to the thesis

There is a wealth of data to support the theory that positive relationships improve psychological and physical wellbeing (Anderson et al., 2011; Baumeister & Leary, 1995; Melvin, Wenzel, & Jennings, 2015; Renshaw, Rodrigues, & Jones, 2008). The quality of soldier relationships has wider implications for the Army, with a potentially negative impact on retention and readiness. Supporting healthy attachments offers a wider social and political benefit (Anderson et al., 2011). Psychological support for intimate relationships is particularly vital for soldiers and their partners as healthy, secure attachments improve quality of life (QoL) and influence recovery rates from the unique mental demands of the military (Tepper, 2014).

Military life can have a detrimental impact on the personal relationships of those that serve, in some cases leading to adverse outcomes (Gerlock et al., 2014; Keeling et al., 2015; Sullivan, 2015). This is not only a symptom of encountering trauma and stress at a level much higher than the general populace (MacManus et al., 2014), but also as a result of routine everyday pressures.

Army doctrine openly discusses the immensity of service life recognising that this inimitable role asks much from those who accept this vocation.

> *In putting the needs of the Nation, their Service and others before their own, they forgo some of the rights and freedoms enjoyed by those outside. In return, British servicemen should be able to expect the Nation, and their commanders, to provide them with the means and ways to achieve the ends set, to treat them fairly, to value and respect them as individuals (Ministry of Defence, 2010, p. 2.15)*

The success of the military is dependent on its people and, supporting this infrastructure, is a growing provision of mental health care. A great deal is expected from British Army soldiers and, when the demands of the role exceed

an individual's personal resilience, there needs to be a robust support mechanism in place to help. "Safeguarding mental health is an integral part of the national responsibility to recruit, prepare and sustain a military force" (Tanielian, 2008, p. 431)

Published statistical results from the US highlight that a large proportion of Service personnel present with PTSD stress symptoms, such as emotional numbing and also experience sexual difficulties and behavioural changes (Badour et al., 2015; Nunnink et al., 2010). However, little is known about the impact of every day stressors associated with being a soldier.

Wilcox et al.(2015) have established that sexual difficulties are prevalent in military populations, but rarely discussed. At present, the general wellbeing assessment does not include changes in sexual functioning or behaviours. This is a critical gap in the medical and therapeutic care from an organisation that, by its nature, enforces separation, engenders daring and desensitises risk. With a growing body of evidence showing that sex hormones also play a vital role in the formulation of stress hormone response (Levine, 2002), the links between stress and sex in occupations where individuals are routinely exposed to high levels of pressure should be better understood.

In 2015, the US ran its first conference specifically on sexual functioning in the military. Named, The Sex & The Military: The Other Invisible Wounds, the conference brought together key voices in the field to discuss sex and intimacy in military populations. The first conference of its kind, it sought to raise the awareness of an escalating problem.

## 1.2 Why this research was important to me personally

My training to specialise in the field of Psychosexual Therapy began while I was living at the Joint Headquarters (JHQ) military base in Rheindahlen, Germany. By some co-incidence, this was only three miles away from where I born, when my family was based at RAF Wildenrath during the early 1970's. So, it is fair to say, that the majority of my life has been spent living among, working with and supporting British Military personnel. I recognise that my own experiences have

shaped my clinical approach to psychotherapy, which fuels my passion for delivering exceptional healthcare to a community that regularly make sacrifices for the benefit of their country.

In December 2015, I was driving to my counselling room across a damp, wet and cold Salisbury plain. I was thinking about my first appointment of the day, a young soldier and his wife. They had presented to therapy following a bout of infidelity; risky and damaging online sexual behaviours. As I reflected on his story, the loss of a comrade to an improvised explosive device (IED) where his body was never fully recovered, his subsequent survivor's guilt, his declining faith in the military, his wife's recent move to an area she did not know, a forced change of job, no doctor as yet, no new friends, no support network… Then from nowhere, a chinook swooped from behind the trees and flew directly over my car, it was so close that I could see the faces of the pilots. The noise was deafening, the hedges shook and its flight angle made me wonder if it was crashing. The cars ahead of me were in awe of this sight and they slowed to watch it. Half a mile later, I had to stop to let an infantry company run past, each carrying a bergen that I suspected may have weighed more than me. The soldiers looked cold, knackered, but happy and laughing. This, I thought, is exactly the reason why I am doing this research. Because when I face that wounded person or couple in a counselling room, considering what therapeutic intervention could help them the most, I remember that this soldier is not doing an ordinary job. The physical, emotional and mental demands are significant.

In my own experience, there have been times when I found living in a military family extremely hard. As the Middle Eastern conflicts in Iraq and Afghanistan intensified, I remember kissing my husband goodbye not knowing if he would return. I would watch the news incessantly each time they announced that another soldier had been killed, then felt the guilt of my overwhelming relief when I would discover it was not him. I have wept at Wootton Basset as I watched my friends pass through the town in union jacked draped coffins to the deafening sounds of wailing families. A sound that haunted me for months. I have looked down the aisle of Chester Cathedral attending a regimental service that was so littered with soldiers in wheelchairs, the procession struggled to get past. Yet amongst those dark and difficult days, there have been so many

moments of kindness, kinship and laughter with my friends, family and the wider military community. I kept all of the letters that my husband and I wrote to each other during those months of separation and it is incredible how the threat of death makes you say things to each other that perhaps other couples never get the chance to voice.

Through my involvement with the Armed Forces, I have born witness to incredible moments of unconditional dedication and human indoctrination that are not seen in most civilian organisations. Living with the military is not just a way of life, it has also become my career. I have been honoured to work with hundreds of personnel and their partners helping them improve their relationships and overcome sexual difficulties. I feel passionately that good relationships are at the heart of individual wellbeing and should be part of the formal military healthcare support.

## 1.3 Clinical implications

This research will meet a clinical need. Therapy for sexual and relationship concerns can be hugely successful if accessed at the appropriate time (Relate, 2020). However, military couples often present to therapy when their relationship is in crisis and whilst treatment for the presenting difficulties are usually successful, the long-term damage to the relationship can sometimes be irreparable. By using early education, specific assessment tools and referral pathways at Civilian Medical Practitioner (CMP) / Medical Officer (MO) level it is hoped that these individuals and couples can be helped before the romantic attachment is lost. In order to do this, research is required to first understand the scale of these issues and then to consider how and when behaviours cross over from controlled and healthy sexual practices to emotionally isolating and psychologically damaging actions.

Moreover, empirical evidence has highlighted that the regular use of self-regulating and risk-taking behaviours in the military is widespread. The prevalence of CSB can vary widely depending on the examined demographic characteristics and the measures used; however, estimates have showed that approximately 13% of male and 4.3% of female veterans demonstrated

compulsive sexual behaviours following deployment (Kraus et al., 2017) versus a civilian national average of 3%-10% (Derbyshire & Grant, 2015; Smith, 2014) When stress impacts the relationship so detrimentally that communication breaks down; are military personnel more likely to turn to pornography or extradyadic relationships for physical release, emotional regulation and sexual satisfaction. If so, do they risk damaging the intradyadic relationship further, leading to permanent breakdown for military families.

Whilst it may appear a difficult subject to those who do not routinely work with sexual intimacy, the military is actually one cohort where, in a clinical setting, their openness to discuss and explore their experiences is evident. Therefore, it is hoped that this work will produce accurate and meaningful data to help shape policy and procedure for an important health factor and to better support the wellbeing and resilience of service personnel.

Sex research is being conducted for the American military on a regular basis (Badour et al.2015; Nunnink et al., 2012; Nunnink et al., 2010; Wilcox et al., 2015; Wilcox et al., 2014; Wilcox et al., 2016); however, there is little evidence of similar research taking place in the UK. With the positive attitude and honesty that I have seen with clients in the counselling room, I believe that this research has the potential to produce world leading research in an arena that some other countries and cultures may be less inclined to investigate.

Within the UK military, there is a good infrastructure in place for mental health and wellbeing, which continues to evolve and improve. However, at the time of this study, it excluded relationship and sex education in relation to military stressors. This study will not only help the service personnel themselves, but it will help their partners and families, along with a number of first line clinical practitioners to discuss an area of healthcare that is marred by personal, social and educational barriers

## 1.4 Introducing the research variables

The relationship between work and home is inextricably linked. Our mood when we leave home in the morning sets up the tone of our working day and our daily

work experience invariably finds its way back to the ones we love. Five years ago, I was inspired by an article written by Mary Seagal in 1983 who wrote of the pressures on soldiers when trying to balance the needs of what she descried as two greedy institutions often pulling in different directions: the military and the family. Thirty years on, little has changed. Based on my clinical work as a Sex and Relationship Therapist working largely with military couples, I was driven to start a louder conversation on how pivotal healthy relationships can be to the mental health of our service personnel and how attachment, sexual functioning and intimate behaviours can be a contra-indicator for wider psychological problems.

This study is concerned with 4 variables; stress, sex, online sexual activity and compulsive sexual behaviour.

### *1.4.1* ***Stress***

Linked to the appraisal of threat, research has shown that it is the interpretation of our own environmental demand that creates a physical response (Carpenter, 2016; Abiola Keller et al., 2012). Therefore, education on how we appraise and deal with stress can change our physical response. McGonigal's YouTube feed (McGonigal, 2013), is a helpful explanation of how the perception of stress can change the adaptive response. If stress is considered bad, then it is more likely to create a threat response. Termed by Carpenter (2016) as cognitive appraisal, there is evidence that stress perception is a psychosocial process that can be adapted and improved in order to develop more helpful coping strategies (Keller et al., 2012; McGonigal, 2013). Personality and identity also contribute to the stress process with certain traits offering improved outcomes through mediating threat perception and increased coping (Ciampa et al., 2019; Schneider et al, 2012)

This makes stress extremely hard to measure or predict. Scientists such as Koolhaas et al. (2011) accept that context and perception interfere with stress physiology and are crucial to meaning making and threat response. Harvey (1999) also argued that stress perception is sensitive to different variables, whether that is biological (sex, age), schema (belief structures), personality

traits (anxious, strong, avoidant), or more to do with inbuilt coping appraisals (personal agency, self-efficacy). Dolan and Ender (2008) agree, discussing the appraisal of threat as intrinsic to the stress response, with social constructs and meaning making fundamental to the coping process.

The theory of perception also extends to cultural context, where soldiers may have early years' societal influences that impact on adult mental health and wellbeing that could influence personal appraisal of stress (Williamson et al., 2019). Conversely, the military culture is such that experiencing mental decline could be seen as weak or letting their colleagues down, in an organisation where strength underpins the ethos (Keeling, 2014). For this study, stress is defined as an environmental demand(s) that exceeds the natural regulatory capacity of an individual (Koolhaas et al., 2011).

### 1.4.2 ***Sexual functioning***

Sexual difficulties occur for many reasons, relationship problems, illness, medication side effects or anxiety for example (Keller et al., 2006). From a physical perspective, in order for an individual to become sexual, three factors are required. There needs to be intact neural supply, a healthy vascular supply and appropriate hormone levels (Minhas & Mulhall, 2017; Trigwell, 2005). Poor sexual functioning can be a side effect of a more serious underlying condition, such as degenerative nervous system disorders, cardiovascular disease or diabetes and would typically be assessed by a medical practitioner. However, even if the physical mechanics of sexual functioning are all healthy, without the correct cognitions (controlled by the central nervous system through the spinal cord), a satisfactory sexual experience still may not be achieved.

Levine (2009, p. 1034) has long argued that sexuality is "based on the idea that all sexual behaviours, solitary or partnered, normal or abnormal, morally acceptable or unacceptable, are shaped by a combination of biology, psychology, interpersonal factors, and culture". Essentially this makes the case that sexual dysfunction and therapy in the past may have been overly restricted and that treating DSM classified disorders was a simplistic approach. Defining sexual dysfunction has required a broader approach than the past basic

behavioural based interventions (Levine, 2009). For some people, impaired sexual response could be as a result of poor relationship health and therefore a natural adaptive response and not a clinical dysfunction (Bancroft, 2002). Kleinplatz (2012, p. 3) agreed stating that “treatment paradigms and our classification of sexual disorders imply a solid conception of normal versus abnormal sexuality”.

Historically, sexual disorders have been classified as a heterogeneous category of complaints that prohibit an individual’s ability to engage in and enjoy sexual pleasure (American Psychiatric Association, 2013). Often presenting to professionals with comorbid disorders, several sexual dysfunctions regularly occur at the same time. For example, erectile problems cause performance anxiety, which then lead to loss of desire. According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) (American Psychiatric Association, 2013), in order for there to be a clinical diagnosis of a sexual disorder or dysfunction, symptoms must have persisted for a minimum duration of six months and have been experienced in more than 75% of sexual encounters accompanied by psychological distress (American Psychiatric Association, 2013; IsHak & Tobia, 2013; Mitchell, Jones, et al., 2016).

When considering classifications of problematic sexual functioning psychologists, sex therapists and medical professionals currently refer to either the International Classification of Diseases, Tenth Revision (ICD-10) (World Health Organisation, 2018) or DSM-5 (American Psychiatric Association, 2013) for a clinically recognised diagnosis. Common conditions are outlined in Table 1 and demonstrate a set of dysfunctions that include both a psychological and physical impairment.

Table 1: *Classifications of sexual dysfunction*

| DSM-5 | ICD-10 |
|---|---|
| Delayed Ejaculation | Hypoactive sexual desire disorder |
| Erectile Disorder | Sexual aversion disorder |
| Female Orgasmic Disorder | Sexual arousal disorders |
| Female Sexual Interest/Arousal Disorder | Orgasmic disorder |
| Genito-Pelvic Pain/Penetration Disorder | Premature ejaculation |
| Male Hypoactive Sexual Desire Disorder<br>Premature (Early) Ejaculation | Vaginismus |
| Substance/Medication-Induced Sexual Dysfunction | Dyspareunia |
| Other specified | Other sexual dysfunction |
| Unspecified Sexual Dysfunction | Unspecified sexual dysfunction |

Whilst these classifications and traditional models of psychosexual assessment can create clear boundaries around what constitutes a clinical presentation requiring specialist treatment, there is a growing body of evidence that suggests this approach to classifying sexual difficulties is limited and creates confusion for clients and sex therapists (Peterson, 2017). Similarly, Levine (2009) has argued that clinical responses to sexual dysfunction has become tantamount to treating DSM-defined sexual dysfunctions with an overly simplistic, behavioural-technique-focused approach. He contended that sexual difficulties are far too broad and complicated to be explained and treated using a narrow diagnostic definition and a single theory or treatment approach.

Perhaps most importantly, the way we define sexual problems has been called into question following high profile scrutiny on the results of previous sex research (Moynihan, 2003). This experience along with the acknowledgement of the limitations of this study which collates data from soldiers once and therefore, cannot claim to discuss dysfunction without a broader context of current experience. In this research, sexual concerns discussed in this study will therefore be termed throughout as sexual difficulties.

### *1.4.3* ***Compulsive Sexual Behaviours (CSB)***

Compulsions can be described as the "continued making of maladaptive choices, even in the face of the explicitly stated desire to make a different choice" (Redish et al., 2008, p. 415). There is a marked difference between a behaviour, even if it is to excess, and a compulsion (Rosenberg & Feder, 2014).

The World Health Organisation has now included Compulsive Sexual Behaviour Disorder (CSBD) within its classifications under its impulsive control category, interestingly, not as an addiction. It is defined as "a persistent pattern of failure to control intense, repetitive sexual impulses or urges resulting in repetitive sexual behaviour. Symptoms may include repetitive sexual activities becoming a central focus of the person's life to the point of neglecting health and personal care or other interests, activities and responsibilities; numerous unsuccessful efforts to significantly reduce repetitive sexual behaviour; and continued repetitive sexual behaviour despite adverse consequences or deriving little or no satisfaction from it" (World Health Organisation, 2018). There is a lack of research in the military in relation to CSB, despite soldiers being at increased risk for psychological syndromes that are linked to it, such as mood disorders, post-traumatic stress disorder and alcohol misuse (Blais, 2021). Neves (2021) debated the importance of not confusing addiction, as a complex pathology related to substances or a behavioural persistence, with compulsivity. He argues that traditional addiction approaches focus on totally eradicating the behaviour, which for sexual compulsions is unachievable, unless you are asking individuals to stop seeking loving relationships and intimate attachments. Therefore, for this study, sexual behaviours that are considered out of control, impulsive or harmful to the individual will be referred to as compulsive sexual behaviour (CSB).

### *1.4.4* ***Online Sexual Activity (OSA)***

OSA is an umbrella term for a wide range of behaviours that involve viewing sexual content and engaging in sexual stimuli using online media. There are several different classifications of OSA spread across solitary engagement, partnered arousal (cybersex), online spending (purchasing sex toys), flirting or

entertainment (pornography) and minority settings (kink, LGBT+, paraphilia). Research by Liu et al. (2020) found that some groups were more likely to engage in OSA. Men for example, were more likely than women to view sexually explicit material, engage in solitary arousal activities and report more cybersex.

Online behaviour is often researched in relation to maladaptive behaviours with many clinicians viewing it as a contributor to negative relational, sexual and mental health outcomes (Twist & McArthur, 2017). For example, with the rising accessibility of the internet, the availability to engage in extradyadic relationships have increased. 72% of Americans report knowing someone who has had an affair online, with a view that these figures may increase as technology advances (Henline et al., 2007). With known prevalence of risk-taking behaviours within the Armed Forces (Thandi et al., 2015; Thomsen et al., 2011) and rates of STI regularly reported as high (Harbertson et al., 2019; Thompson et al., 2005; Whitehead & Carpenter, 1999), soldiers could be at greater risk of damaging OSA.

It is not truly established whether an increase in sexual activity for soldiers is related to sensation-seeking behaviours, high levels of alcohol use or a masculine-based culture or a combination of all of them. For this study, all online sexual experiences, positive or negative, will be termed as online sexual activity (OSA).

## 1.5 The relationship between stress and sex

The combination of relationship concerns and occupation demand contribute to common mental health presentations for Army personnel (Finnegan et al., 2011). There are some discrepancies in terminology; some researchers refer to work fatigue, operational demand or resilience, yet all recognise the physical, mental and emotional decline in soldiers once they have been exposed to prolonged stress or work overload (Anderson et al., 2011; Frone & Blais, 2019).

Healthy sexual functioning is a complex process informed by physical, emotional and cognitive responses that enable an individual to engage in an intimate sexual experience. The pleasure of that experience is influenced by

expectations, core beliefs, social and culture conditioning and the couple relationship (Cecil et al., 2002). It is a delicately balanced response cycle that can be adversely affected by many health and wellbeing conditions, including stress. Stress may impact on sexual behaviour by either increasing libido or inhibiting desire. Due to personal scripts, previous experiences and cultural influences, responses may not always be the same for everyone under equal circumstances (Gagnon & Simon, 1974).

Sexual drive is pivotal in the process of actively seeking out intimate sexual connection. Whilst much research has been conducted on sexual functioning performance and the role of biological factors, over recent years the focus has also extended to further understand the relational, emotional and motivational factors that can interfere with healthy sexual desire (Leiblum, 2010).

Sex is known to be a stress reliever (Liu et al., 2016). It can offer a secure platform for bonding a healthy attachment creating a physiological response that promotes feelings of wellbeing. In contrast, as sexual motivations begin in the brain, feeling overwhelmed may act as a barrier to seeking out intimacy. When the body is in a state of alert, vital messages that would usually travel from the brain to the genitals may be disturbed either blocking emotional desire or disrupting standard physical responses (Hamilton & Meston, 2013; Meston & Lorenz, 2013).

The complexities of sexual functioning and its link with stress means that soldiers will not usually present with a psychosexual issue at first. They may seek help from their GP, nurse, Padre, or welfare officer with more routine physical symptoms such as poor sleep hygiene, digestive issues, lack of concentration or general relationship problems. With little training on the impactions of sexual functioning, mental health clinicians are unlikely to ask about sexual behaviour, limiting dialogue across the full spectrum of wellness (Sobecki et al,2012).

In addition, soldiers may fear the professional repercussions of seeking help for mental illness related to stress or overwhelm (Jones et al., 2019; Sharp et al., 2015; Stevelink et al., 2019; Williamson et al.,2019). Barriers to help-seeking

include concerns on promotional prospects, peer attitude or personal pride; there is a resistance to seeking support and a tendency for patients to attribute symptoms to more somatogenic causes than to accept a potentially stigmatic psychological diagnosis. Human sexual behaviour is private and considered sensitive (Cecil et al., 2002) and therefore, this research consciously considered respect, dignity and sensitivity in its planning.

## 1.6 Current mod policy and directive for mental health services

Since the mid-nineteenth century, the concept of health of the British soldier has evolved from what was classified as hygiene (keeping clean and not infected to survive battle), to health (staying physically fit to fight), to a much broader sense of wellbeing (being psychologically, emotionally and physically well) (Bricknell & Ross, 2020). The health and wellbeing of the British Army remains critical to its political, social and strategic intent.

In 2020, mental health in the British Army was overseen by the Defence Medical Services (DMS). Its remit was to promote, protect and restore the health of the UK armed forces to ensure that they are ready and medically fit to go where they are required in the UK and throughout the world. With over eleven thousand staff, it is a major branch of the Armed Forces. Mental health and wellbeing were managed through a network of Department of Community Mental Health (DCMH) services, with personnel supported by local mental health professionals. Medical centres took responsibility for sexual health; however, empirical evidence found that sexual functioning and behaviour were not routinely discussed as part of mental health screening.

Following the conflicts in the Middle East, the UK military introduced a trauma assessment tool to mitigate against mental health symptom in soldiers. Trauma Risk Management (TRiM) was a peer led assessment tool aimed at supporting those soldiers who have been exposed to a traumatic event and are considered to have an increased risk of developing psychological concerns (Pinder, Fear, Wessely, Reid, & Greenberg, 2010). Primarily a tool for combat-related distress, TRiM was regularly used in low-intensity environments providing assessment and promoting wellbeing across the Army.

Deployed personnel were cared for by field mental health teams (FMHTs) in theatre, comprising of psychiatrists and mental health nurses (Jones et al., 2016). Further measures such as post operation decompression offered vital support to help soldier reintegrate with their families following lengthy periods of separation (Finnegan et al., 2011).

In 2020, UK in-patient care was provided by the National Health Service with consultation from military health providers (Hunt et al.,2014). Overseas personnel were supported by localised contracted services under the management of the Surgeon Generals department.

Well-adjusted personal resilience is vital in a culture where stress is inherent. Coping mechanisms are now taught as part of basic training in the UK, through a programme called Operation Smart (OP SMART), to support soldiers as they begin their careers and manage the demands of military life. Further support was also provided at commander level, where publications such as the Commanders Guide to Mental Health, helped to outline the Army's expectation of their leaders in relation to soldier mental health and wellbeing. (Ministry of Defence, 2014).

## 1.7 Aims of the study

The overarching aim of this study was:

***1. To investigate whether sexual functioning could be a useful predictor for resilience overwhelm, attritional stress and maladaptive behaviours.***

I hoped to generate a broader discussion regarding the evaluation of sexual functioning as an early indicator of more general physical and mental health concerns to use as a red flag for risk taking behaviour and emotional deregulation.

The study focused on 6 main research questions:

1. ***Is stress correlated with sexual difficulties?***
2. ***Is stress correlated with online sexual activity (OSA)?***
3. ***Is online sexual activity correlated with sexually compulsive***

***behaviour (CSB)?***

4. ***Is OSA correlated with loss of desire and sexual satisfaction?***
5. ***Is OSA correlated with feelings of intimate partner closeness?***
6. ***Does living alone have a higher correlation with increased online sexual activity when compared to other living arrangements?***

As a psychotherapist working within the field of sex therapy, I also sought to identify potential at-risk groups for poor stress appraisal and to highlight protective factors for well-adjusted coping strategies. This could help inform psychoeducation for clinicians working within the military, to improve patient assessment and referral pathways for attritional stress and fatigue (ASF). For me personally, it was important that this research would be able to offer practical applications to enhance the psychological care for British soldiers and improve relationship outcomes and quality of life (QoL). Therefore, the study had two clinical research aims:

1. ***To clearly define the most at-risk groups for resilience overwhelm, attritional stress and maladaptive behaviours***
2. ***To identify protective factors from the soldiers who demonstrated a healthy stress response***

## 1.8 Self-reflexive position

This study did not seek to pathologise sexual behaviour, but rather to help those individuals who may not understand why they seek reward-based behaviours and to offer education on the implications of physical or emotional changes in regard to sexual intimacy. Recommendations aim to promote self-care and individual ownership for sexual behaviour and lifestyle choices in a primarily young and sexually active community.

Sexual incompatibility, difficulties and infidelity ends relationships. This study strived to demystify some of the confusing short-term sexual responses unique to forces life, to create a professional and respectful language to aid assessment and to reassure personnel that most sexual difficulties caused by

an inability to cope with stressors can be resolved. In short, whilst it does not directly link to the research questions and aims, this research has an ideological view that one benefit of its outcome may be to keep service personnel sexually informed and ultimately, keep more forces families together.

I sought to create an accurate picture of the current stress experience of soldiers and its impact on intimate attachment. There is a recognition that, as a researcher, meaning and bias can be attached to those findings (Coolican, 2009). In order to pass the scrutiny of my peers, it was important to produce a study that sufficiently challenged my early hypotheses. I recognise that I live and work within the area of this study. I have my own personal experience of life in the military as a daughter and wife, which may guide some of my thought processes and interpretations.

I consider my own experience to be a predominately positive one. However, my professional work has exposed me to many areas of couple disharmony; some of which were purely familial or martial issues and some of which had a military genesis. Where possible, I have actively focused on the research questions when interpreting the data in order to maintain neutrality and regularly used academic and clinical supervision to challenge my thinking.

Recent research in the healthcare sector has seen a shift in focus to the use of knowledge in a more practical and meaningful way, thus ensuring that research data and interpretation fuels practical change in clinical provision (Alley et al., 2015). My position is not simply as an observer, reflector and orator. This research sought to be more than that. It seeks to effect change, to be relevant and helpful and to directly benefit the lives of soldiers that face an ever evolving and challenging future.

Evidenced based education could help to reduce the number of failing relationships, family breakdowns and separated parents. This research is therefore, explicitly positively focused with the promotion of healthy intimate relationships at the fore.

# 2 Theoretical Foundations

This chapter introduces the key theories pertinent to the research questions and clinical aims. Science and research have always required simplification in order to explain circumstances in a bounded manner, that aides understanding and the development of treatments. Therefore, the selected concepts represent their own delimited theoretical stance of the phenomena, each with relevance and value.

## 2.1 Stress theories and models

Through a recent systemic review of the literature on stress, Shahsavarani, Abadi, and Kalkhoran (2015) found that there were three main theoretical models: response-based; stimulus-based; and cognitive-transactional based.

### *2.1.1* ***Response-based perspective***

Following the work of Walter Cannon (1935) on how stress and strain impacts on homeostasis, Hans Selye began to conceptualise stress in more detail and centred his research on understanding regulatory responses to threat (Selye, 1950, 1978). He defined the General Adaptation Syndrome (GAS) which has been applied to explain the physical reaction to threat in three phases, the alarm phase, resistance phase, and the exhaustion phase (Randall & Bodenmann, 2009). Sometimes compared to the fight or flight model, it measures how changes to the sympathetic nervous system result in a somatic response which can alter homeostasis. Selye also noted that some stressors had individual characteristics resulting in adapted defence responses. This response-based model works on the basis that an organism will respond to an external threat or series of threats that will disrupt normal coping patterns causing a harmful reaction.

Such traditional biological models have concentrated on “brain-based perturbations of physiological systems that are otherwise essential for normal homeostatic regulation and metabolic control” which focus purely on the individual themselves in relation to specific applied pressures (Cohen et al.,

2016, p. 1). However, Selye did not appear to be concerned with the context and nature of those stressors (Shahsavarani et al., 2015). Although a physical stress reaction occurs as a helpful response to threat, prolonged or accumulative stressors are known to lead to exhaustion or a diminution of personal resource increasing susceptibility to ill health (Holmes & Rahe, 1967; Lazarus & Folkman, 1984). Stress that results in change to factors such as the immune system and cardiovascular function have been linked to disease causality and are a contributor to premature death and as such have made this model the basis for many medical disciplines (Cohen et al., 2007; Horowitz & Zaslav, 2004; Keller et al., 2012; McGonigal, 2013).

Criticisms of the response-based perspective suggests that it ignores the role of cognition and emotion (Shahsavarani et al., 2015). With its origins based in the field of medicine, it has a more physiological perspective which supports the assessment, diagnosis and treatment of stress but does not always consider the cause (Cooper et al., 2000). There has also been criticism about the definitions associated with stressors suggesting that while categories such as life transitions, daily hassles or specific traumatic events may offer a causal perspective on strain, the frequency, gravity or duration are often unobserved (Cooper et al., 2000). Finally, this model does not always consider individual responses, recognising that it is subject to an individual's current state or condition. What may constitute as highly stressful for one person, may not be stressful at all for another (Kumar & Jain, 2012; Thoits, 1995).

### 2.1.2 ***Stimulus-based perspective***

The stimulus-based model seeks to identify the probable sources of stress (Cooper et al., 2000). Holmes and Rahe (1967) began researching this model in the latter part of the twentieth century looking specifically at how life events could either positively or negatively tax the capacity of an individual leading to physical or psychological health concerns. Developing the Social Readjustment Rating Scale (SRRS), they began to measure whether significant life changes impacted on the susceptibility to illness.

Rationale for this model is based on the principle that external forces are responsible for individual distress and pressure. More rooted in engineering

theories, it assumes that a continued load on a personal resource can be injurious (Cooper et al., 2000). Much like when materials are subject to a force, it may stretch or bend until it snaps; it is the elasticity of the material that affects how much it can bear under a load and it is the strength of the material that will determine how much tension it can withstand before it fails (Harvey, 1999).

Criticisms of the stimulus-based perspective argue that it fails to consider the biological, cognitive and emotive factors of the individual (Shahsavarani et al., 2015). It does not account for individual appraisal of life events, how they attribute meaning or reflect on personal coping strategies which will impact on how a person may respond to stressors, suggesting that the individual is mostly passive in the process (Harvey, 1999; Houston, 1987). This criticism is relevant to the stress experience of soldiers, who tend to encounter life stage events within a similar time frame.

### 2.1.3 ***Cognitive-transactional based process perspective***

Lazarus and Folkman (1984) proposed a third model of stress that allowed for individuality, arguing that people were able to think, evaluate and then react, accentuating the role of cognition. Cognitive-transactional based perspectives regard stress as a process related specifically to the individual and their environment which allows a person to measure the threat against their personal recourses. This perspective of stress consists of three metatheories: transaction; process; and context, suggesting that both the individual and their environment are not mutually exclusive and should be considered together (Shahsavarani et al., 2015).

The transactions in this model of stress response claim that it is the negative appraisal of stress that determines whether a threat can be adequately coped with and that situations only become distressing when an individual is concerned that they do not have the adequate resources to meet the demands (Carpenter, 2016; Mitrousi et al., 2013). Accepting that this model is based on personal interpretation could suggest that social constructs such as culture and gender roles play an important part in the appraisal of stress. Evidence has proved that the interaction between negative psychological appraisal and acute

physical response can cause biological deregulation impacting on digestion, immune functioning and sexual functioning (Randall & Bodenmann, 2009).

Criticisms of the cognitive-transactional model claim that there should not be substantial reliance on the subjective interpretation of an event. Dohrenwend and Dohrenwend (1974) were early to argue that consequences of quantifiable life events should be considered to help identify the primary factors that might be activating a stress response.

## 2.2 Occupational stress models pertinent to service in the British Army

Campbell and Nobel (2009) found that historic reviews of occupational stress largely overlooked workplace settings with only a small number considering the specific context of the Military. They identified three occupational models that could be considered relevant to the British Army.

### *2.2.1* ***Specific stressors approach / person-environment fit model***

Aligned with the person-environment fit model (Caplan, 1987; French, 1974), this approach claims that when a person's skills and resources match a clearly defined role, then stress is limited. Conversely, when occupational expectations are poorly defined or conflicting or indeed the person believes that they do not have the capability to meet the demand, then undue strain is experienced (Caplan, 1987). This concept is rooted in research based on vocational choice conducted by Parsons (1909).

This approach assumes that individuals have an inherent need to fit into their work setting which may lead them to take roles that correspond with their own personal characteristics (van Vianen, 2018). Evidence has shown that where there is a lack of parity between personal characteristics (values, goals, skills) and occupational environmental (demands, supplies), then individuals are more susceptible to declining resilience leading to psychological or physical malady (Edwards & Cooper, 1990). Individual expectations and personal need must also be considered. In a military context for example, Clouatre (2016) found that the majority of Officers experienced greater job satisfaction with exposure to

more leadership opportunities, yet there were a small number who found the increased responsibility correlated with lower job satisfaction.

This model has become widely accepted in occupational or organisational stress research, yet criticisms of the specific stressors approach query whether it is possible to have one version of a person-environment fit model when stress response can be so subjectively based (Edwards & Cooper, 1990). Others question whether it is possible to accurately measure cause and effect where there are so many variables of an approach; such as the person-supervisor fit, person-team fit or environmental supplies versus personal goals fit (SV-fit) or the environmental demands versus personal skills fit (DV-fit) (Chuang et al., 2016; Edwards & Cooper, 1990; van Vianen, 2018). Caplan (1987) also asked who (individual or others) would be responsible for any adjustment to fit as a role demand fluctuated. As individuals are nested within a multidimensional environment, there remains a need for an appropriate measure that integrates the many of these theories (Chuang et al., 2016).

### 2.2.2 ***Global dimensions approach / job demands–control–support model)***

The job demands–control–support model (Karasek, 1979) is a prominent theoretical approach that explains the relationship between role characteristics and an individual's psychological health (Hwang & Ramadoss, 2016). Considered in both terms of environmental demand (pressures) and job control (autonomy, decision making and skill utilisation), these psychosocial elements of the occupational setting interact to affect the level of personal stress experienced.

Karasek et al.(1982) also discussed the importance of social mechanisms as an additional factor of coping, which was added to the model by Johnson and Hall (1988) following their research on workplace social support. Increased job demands negatively impact on individual well-being, whereas greater job control and effective social support can act as a buffer for work related stress (Cooper et al., 2000; Johnson & Hall; 1988; Kalleberg, 1977).

Criticisms of this model are that it mainly focuses on workload as the source of work stress. In an Army setting, role demand and workload severity can vary

considerably depending on whether a soldier is in barracks, training or on Operations (Bray et al., 2001; Campbell & Nobel, 2009). It also does not consider personal characteristics or role diversity such as sex, rank or relationship status which may impact on each individual's response to stressor (Campbell & Nobel, 2009). This model also assumes that job control is a positive factor; however, increased autonomy may not be the case for some soldiers who are comfortable operating within the safety of a broad team with defined roles and clear orders.

### 2.2.3 ***Psychological outcomes approach / effort-rewards imbalance (ERI)***

When reviewing occupational theories related to military stress, Campbell and Nobel (2009) found that the conceptual approach of psychological outcomes were pervasive in the literature. Bartone et al. (1998) for example, identified several workplace psychological stressors that negatively impact on soldiers, such as uncertainty, role ambiguity or powerlessness. In more recent times, less jobs are purely physically demanding and more roles have become psychologically challenging (Peter & Siegrist, 1999).

Similar to the effort-rewards imbalance (ERI) model, the psychological outcomes approach suggests that occupational effort can be linked to personal rewards such as financial gain, career progression and job security. Where employer return is not deemed proportionate to the amount of individual commitment and effort, there can be mental and physical health decline (Kinman, 2019; Peter & Siegrist, 1999; Siegrist, 1996). This is supported by evidence that in some militaries, ERI has been strongly correlated to adverse health outcomes (Brooks & Greenberg, 2018).

This model has seen increasing popularity in health research and psychology as it allows for individual context and considers broader employment characteristics (Kinman, 2019). However, criticisms of this model propose that it is based on a static role and cannot account for the spontaneous nature of change, a regular feature of Army service. For many service personnel, the amount of personal commitment may vary at different life stages and in relation to fluctuating leadership styles which occur regularly with a rotating chain of command.

## 2.3 Sexual functioning theories and models

### *2.3.1* ***Behavioural Approach***

Masters and Johnson (1966) were responsible for pioneering observational research into the anatomical and physiological processes of sexual response. Their focus was primarily on the physiological function, ahead of other social, relational or psychological factors, which they believed took precedence in understanding human sexuality (Avery-Clark & Weiner, 2017). Their work created a model for treating sexual concerns using non-medical behavioural techniques and psychoeducation and created the short-term sex-therapy approach (Avery-Clark & Weiner, 2017; Levine, 2009). Creating the intervention model, *sensate focus*, it incorporated intimacy exercises to help couples regain the ability to engage in satisfactory sex and has been the mainstay of psychosexual therapy for many clinicians (Crozier, 2021).

The Masters and Johnsons approach is physiological-behavioural based and states that an individual's sexual response cycle is linear and predictable, progressing through phases of excitement, plateau, orgasm and resolution with the prime attention on genital response (Levine et al., 2003; Masters & Johnson, 1966; Montgomery, 2008). This model was added to in the 1970's when Kaplan (1974) introduced the concept of desire to the model, emphasising the importance of desire in relation to sexual response (Thomas & Thurston, 2016).

Criticisms against this heavily physiological model stated that it oversimplified sexual response (Bancroft, 2002) and there was also suggestion that it did not account for any other type of approach with ambiguity in its procedures (Avery-Clark & Weiner, 2017). Furthermore, there were suggestions that *sensate focus* (a sex therapy technique created by Masters and Johnson in the 1960's) did not account for individual want or experiences and has been negatively termed as a creating a "paint-by numbers sex method" (Kleinplatz, 2005) or has been more harshly criticised for being horizontal, cadaver-like sex (Schnarch, 1997).

### 2.3.2 ***Biomedical and Psychobiosocial Approach***

The main benefit of the biomedical approach is its strength in recognising the importance of medical factors in sexual function, including neurological, vascular and endocrine concerns and is best suited in response to specific disease or illness (Peterson, 2017). Since the discovery of the benefits of Sildenafil as a vascular relaxant which can improve the strength of male erections, research into medical or pharmacological interventions for a better sexual experience continues to grow (Bancroft, 2002). As pharmaceutical companies fund much of the sex research in the western world, the biomedical approach has been dominant, neglecting the relational, social and cultural aspects of sexual function (McCarthy & Wald, 2017).

Critics of this biomedical model argue that is focuses on performance and creates a false normal which can be unrealistic and difficult for some people to attain (Peterson, 2017). Looking from a feminist lens, Wood, Koch, and Mansfield (2006) go further and argue that it uses the male model as the standard based on a linear view of sexual response leading to a biological reductionism. It is further criticised for focusing on a heteronormative construct, with sole interactions (pills, injections etc.) concentrated on performance, such as erection or orgasm, without considering couple connectedness, sexual satisfaction or pleasure (McCarthy & Wald, 2017).

The psychobiosocial approach seeks to provide a more comprehensive model to assess and treat both male and female sexual functioning difficulties considering previously overlooked factors such as attitudes, feelings and personal context (Peterson, 2017). It offers an integrative platform combining the biomedical paradigm with a clinical emphasis on pleasure and realistic expectations, considering all interpersonal, physical, sociocultural and psychological factors (Thomas & Thurston, 2016). The Good Enough Sex model is an example of this type of approach which challenges historic oversimplified views and aims to provide realistic and achievable outcomes for couples (Metz & McCarthy, 2007). Rather than emphasising a cure, such models aim to move away from the biomedical led interventions that see

medication as the favoured line of treatment and only including psychological or relational factors if the first line approach fails (Berry, 2013).

The psychobiosocial framework intends for a more integrated way of approaching sexual dysfunction and the interrelated processes that influence them. It aims to bridge the gap from the psychosocial model which did not include evidence-based interventions and had previously been labelled as ideological (Seidman, 2007). It could also be argued that each clinician will have a bias (psychological, biological or social) depending on their field of expertise, with medical professionals and psychosexual sex therapists for example, leaning towards their more familiar domains.

### 2.3.3 ***New View Model***

The New View model was conceived following criticism in the progress of new treatments for male erectile difficulties and an increasing focus to creating pharmacological remedies to improve female sexual functioning. (Tiefer, Hall, & Tavris, 2002). A movement of social campaigners and feminist clinicians collectively began to debate the distortions created by grouping sexual problems as universal physiologically based disorders with pharmacological treatment as a first line approach (Kaschak & Tiefer, 2001; Wood et al., 2006). The New View model argues against the medicalised view of sexual function and promotes research, education and assessment protocols that are based in human experience and meaning rather than solely looking at function and biology (Tiefer, 2001).

Focused primarily on female sexual experience, the New View nomenclature rebuffs the notion of linear sexual response and recognises that dissatisfaction can occur with any physical, emotional or relational features of sexual intimacy. It acknowledges that similarities cannot always be drawn between men and women as they do not account for the impact of previous sexual experience or social disparities linked to culture, ethnicity, sexual orientation or class (Lancaster & Di Leonardo, 1997; Tiefer et al., 2002; Travis & White, 2000). The model analyses the American Psychiatric Association's classifications against these disparities that impact on assessment and diagnosis. It reviews the international perspective on sexual rights and discusses the definition of female

based sexual problems as “discontent of dissatisfaction with any emotional, physical, or relational aspect of sexual experience” (Tiefer, 2001, p. 91).

Historic views on sexual functioning have focussed on getting the genitals to work appropriately, which promotes a mechanically based view of sexual interaction whilst omitting to consider much of the socially constructed complexities of sexual issues (Tiefer, 2001). The New View approach suggests a wider focus with four categories potentially contributing to sexual problems; sociocultural (political, or economic), relationships, psychological or medical factors (Wood et al., 2006).

This model has feminist roots and argues “that women are not a homogenous group, and that women’s sexuality is not a single or simplistic phenomenon” (McHugh, 2006, p. 362). By its nature, it is therefore female focussed and does not specifically address male sexual functioning.

### 2.3.4 ***Dual control model***

The Dual Control Model centres on the balance between an individual’s inhibitory and excitatory processes in the central nervous system. (Bancroft & Janssen, 2000; Janssen & Bancroft, 2006; Janssen, 2007; Velten, 2017). This theoretical framework seeks to help to identify causal factors for sexual problems informing education and treatment protocols (Velten, 2017). Described by the Kinsey Institute (2021, p. 1) as liken “to having both a gas pedal (excitation) and a brake pedal (inhibition) in a car, every person will engage one or both pedals to a differing degree in any particular sexual situation, depending on their unique sexual physiology, history, and personality”. These variations help to understand the differences in human sexuality and resulted in the development of validated instruments to measure the propensity for sexual excitement and inhibition in both men and women (Bancroft et al., 2009; Granados et al., 2021).

With particular relevance to this study and soldier behaviour, the Dual Control Model considers how excitation and inhibition are impacted by stress and how individual response to inhibition may impact on sexual behaviour (Janssen & Bancroft, 2006). Janssen and Bancroft (2006) propose that sexual inhibition

function could be impacted by the suppressing effects of stress on behaviour, with the appraisal of danger or threat inhibiting sexual response. The process of inhibition is considered adaptive and helpful for healthy sexual choices. Where inhibition is elevated, some may experience difficulties with sexual interaction related to performance anxiety for example and where excitation is increased, individuals may feel less restricted and may be willing to take more sexual risks (Bancroft & Janssen, 2000).

Early criticism claimed that this model has focussed mainly on male sexual response and that some of the inhibition factors, such as performance anxiety, may not be as applicable for females, yet this has been addressed more recently with growing evidence on female responses (Granados et al., 2021).

## 2.4 Compulsivity theories and models

When considering compulsivity in its broadest context, West (1989) found that there were three main theories, including decision theory, drive theory and lastly behavioural theory. More recently, behavioural theoretical models relating to compulsivity have evolved to consider psychological and social influences and therefore the biopsychosocial model has been discussed as more relevant to the study aims.

### *2.4.1* ***Decision Theory***

Compulsive behaviours are disorders where an individual can choose to partake or not to partake in an experience to excess. These choices are the result of a fundamental human decision-making system which directs an intended action amongst a choice of alternative behaviours (Bickel et al., 2018; Engel & Cáceda, 2015). Research into decision making models have stemmed from other expectancy-value models such as the Subjective Expected Utility (SEU) Model (Edwards, 1954) which suggests that when an individual is faced with two or more potential courses of action, they will select the option with the greatest subjective expected value.

Following a review of more modern theories, Redish et al. (2008) sort to group overlapping decision-making models for a more unified approach. They found

that decision making can occur during the access of three interacting systems: the planning system (an adaptive system able to consider consequences); the habit system (in which actions are linked to situations or environment); and situation-recognition system (where processes are classified in relation to context and linked to memory). They argue that individuals have failure points within these systems that expose them to greater levels of compulsive behaviour. Others have conceptualised maladapted decision-making as a spectrum of impulse or control afflictions (Coleman et al., 2018; Grant et al., 2010; Hollander & Rosen, 2000; Kraus et al., 2016). Whilst Redish et al. (2008) list impulsivity as one vulnerability to decision making, they also discuss other failure points, such as biological based urges in relation to allostatic or homeostatic rebalance, reward-based hormonal drives or a wider decline in cognitive executive function.

Despite differences in terminology or approach, the consensus among theorists is that maladapted decisions are often weighted to the short-term anticipated rewards, regardless of the potential for future negative consequences (Hagger et al., 2019; Redish et al., 2008; Verdejo-Garcia et al., 2006). Critics of the decision model behaviour suggest that any expectancy-value approach can only partially explain intention (Sutton, 1987) or given that compulsions and mental health conditions are so closely correlated (Luigjes et al., 2019), individuals may not have the mental capacity for healthy decision making alternatives (Goldberg, 2020).

### 2.4.2 ***Drive Theory Model***

Drive theory suggests that humans have basic needs, such as hunger, that will elicit a drive to have those needs met. Whilst most needs are central to our survival, other compulsive drives can be damaging to QoL and wellbeing. Drive theory was conceptualised by Hull (1943) who surmised that elevated arousal generated behaviours or actions in response to internal tensions, caused by unmet primal needs. Drive theory is also an important contributor to the science of habit strength and formation which Hull believed predicted a behavioural direction, learning and reinforcement (Geen & Bushman, 1987).

Sexual drive is also endogenously motivated and akin to other appetites, such as hunger, which are all necessary for survival of the species (Kafka & Kafka, 2010). Kafka (2001) offered the perspective that compulsive sexual behaviour was caused by deregulation of the biological drive influenced by psychological factors. Johnson (2013) more recently introduced the importance of will into drive theory suggesting that the search for human connectedness can satiate arousal or need but sexual pursuits that do not include the *seeking* element, can be ultimately unsatisfying because the drive process has not been fully met.

Criticisms of drive theory suggest that it is heavily based on homeostasis and does not explain those behaviours that do not meet a human need; for example, those people who eat when they are not hungry (Cherry, 2020).

### 2.4.3 ***Biopsychosocial model***

The biopsychosocial model was introduced by Engel (1977), with an aim to move the focus of interest away from disease and towards the individual (Becoña, 2018). This approach argues that there is likely to be countless factors such as biological determinants, operant conditioning, personality traits or social influences that contribute to compulsive behaviours (Griffiths, 2005; Griffiths, 2012; Samenow, 2010; Skewes & Gonzalez, 2013). Science has been unable to define a singular reason why one person may engage in a reward based behaviour without developing a compulsion to repeat their actions whereas others find themselves dependent on the experience (Skewes & Gonzalez, 2013).

Samenow (2010) classes the biopsychosocial model as grounded in systems theory implying that each aspect of the system will be influenced by other systems. This can be particularly helpful for understanding compulsive actions as it roots the problems within the individual's own understanding of the issue as opposed to following a particular school of thought. Samenow (2010) also suggests that this model can draw on other theories for each system, such as considering the amygdala, biological and cognitive (ABC) theory of impulse control (Stein, 2008) in relation the biological system or the dual control model and effective regulation (Bancroft & Janssen, 2000) for the psychological system.

As a prominent figure in the arena of compulsive sexual behaviour, Carnes (1991) has long argued that there is a myriad of factors that influence whether an individual will become reliant on sexual activities. Griffiths (2005) aimed to identify some of the components of excess behaviours and identified commonality in compulsive processes, such as salience, mood alteration, tolerance, conflict, withdrawal and relapse. Compulsive behaviour is complex and highly affected by contextual factors which creates criticisms of many approaches, arguing that there is unlikely to be a one-size fits all model (Samenow, 2010).

## 2.5 Gender construction theories and models

Research has evidenced that significant differences occur by gender in a number of physical and psychological maladies (Courtenay, 2000; Hammarström et al., 2018). Gender is highly relevant for this study of a predominately male cohort with an historic and deep masculine culture (Mankayi, 2008, 2010), but it also offers a process in which "institutions and structures are themselves gendered and have differential implications for women and for men" Beckwith (2005, p. 133). Two key theories on gender construction have been discussed.

### *2.5.1* ***Social role theory***

Social role theory was developed by Eagly (1987) to understand gender development and why men and women act differently in some circumstances and similarly in others. This model postulates that traditional occupations and societal expectations (gender beliefs) lead to stereotypes that define gender roles in their environment (Eagly & Wood, 2012). Difference in gender is further amplified in occupations such as the military where physical aggression is intrinsic to the role (Archer, 2009).

Anselmi and Law (1998) define gender role as based in social anticipation demarcated by what is expected from the society that they belong to. They argued that sterotypes are overgeneralised beliefs created by their membership of one or more social categories. Gender roles have developed over time as a

result of biological influences, men have been considered physically stronger and taken more provider roles and women have held nurturing and caring roles (Eagly & Wood, 2012). As communities evolve and typical gender roles are interchanged, men train to be nurses and women working as firefighters for example, there remains a tedancy for individuals to favour subspecialties or to act in accordance to their personal view of their gendered or stereotypical role within that environment (Schneider & Bos, 2019).

Critics of social role theory claim that the nature and scale of sex differences, particularly in relation to aggression are better explained by sexual selection than biosocial descriptions (Archer, 2009). Browne (2009) adds that if men display greater aggression based on the masculinity of their role, then women placed in the same role should eventually behave in a similar manner, which so far has not been proven in soldiers. Historic research on this theory has also been limited to stereotypes on gender and has rarely considered other stereotypes (Koenig & Eagly, 2014).

### 2.5.2 ***Hegemonic masculinity***

Hegemonic masculinity as a theoretical construct, that came to prominence via Carrigan et al. (1985), followed a synthesis of related studies. Connell and Messerschmidt (2005) describe hegemonic masculinity "as the pattern of practice (i.e., things done, not just a set of role expectations or an identity) that allowed men's dominance over women to continue". Hegemonic masculinity also encompasses the power that some men have over less dominant groups of men (Jewkes et al., 2015; Morrell et al., 2013). Connell (2008) suggested that masculinity is relational, particularly in its contrast to femininity. Yet its meaning extends further, with arguments against such a binary gendered concept and a recognition that gender hierarchy is now multifaceted and complex (Budgeon, 2014). Hammarström et al. (2018) also contest the idea of categorical thinking where men and women are viewed as diametrically opposite.

In Western cultures, the role of women has evolved in education, employment and in relation to traditional family functions. Patriarchy, in its purest form, has been challenged by feminist movements and whilst the social construct of binary gendered roles may have been contested, women remain subordinated

in many spheres (Budgeon, 2014). Philosophies about gender function reside in social factions, where communities determine how men are valued in relation to women. This defines how men consider themselves, and also, how those social groups behave in relation to others (Hearn, 2012).

Hearn (2012) discusses societal complicities rather than the brutal enforcement of dominant masculine traits, recognising that society itself has a role in gender power and how men place themselves in their social order. High male power also has an influence on health behaviour with some men reluctant to acquiesce dominance by admitting hurt or pain (Courtenay, 2011; Courtenay, 2000). Illness may contest a person's status in gender hierarchies resulting in a potential loss of confidence and masculine self-doubt leading to a diminution of power (Courtenay, 2000).

Criticisms of this theoretical concept argue that it can be difficult to distinguish hegemony, especially in marginalised groups (Morrell et al., 2013). Yang (2020) offers a vocal critique suggesting that there is pessimistic tendency in the interpretation of hegemonic masculinity as negatively accepting patriarchy and not recognising the value that healthy masculinity can have on societies.

## 2.6 Decisions on theoretical foundations

Table 2 displays the selected theoretical models most suitable to underpin this study. Following a review of the broad range of approaches, the decision was made to favour the biopsychosocial schools when considering stress, placing a broader view of individual experience at the heart of the data. Whilst the behavioural models could be considered relevant to the observation of physical symptomology, it did not allow for social context, which this study hoped to explore. Models such as the stimulus-based perspective and the specific stressors approach offered value in understand the source of personal pressure but were also restricted by not wholly considering the variation in human response and have therefore been discounted.

Table 2: *Foundational theories selected to underpin this study*

| *Concept* | *Foundational theory* |
|---|---|
| **Stress**<br>**Occupational stress** | *Cognitive-transactional based process perspective*<br>*Psychological outcomes approach / effort-rewards imbalance (ERI)* |
| **Sexual functioning**<br>**Compulsive sexual behaviour**<br>**Online sexual activity** | *Dual Control Model* |
| **Gender** | *Social role theory* |

I have chosen that sexual functioning and behaviour would be viewed using the framework of the Dual Control Model. This framework can be used to understand a soldier's relationships with sexual intimacy offering a foundational platform from which to consider both the impact of a maladapted stress response on sexual function and to understand where sexual drive is effective and satisfactory. Whilst the other models offer some useful insights, their origins were considered more clinically based and more relevant to psychosexual assessment and treatment paradigms, than this focussed research project. The New View was less relevant for this research, with a population comprised of 90% males. The Dual Control Model will be used to explore the determinants for reduced excitation and increased inhibition in soldiers.

Gender consideration and difference is a crucial element to this study. As most research to date has focused on the combat environment, women are largely absent from any military studies on sexual functioning. As women take on wider roles within the Army, sex (in biological terms) and gender similarities and differences will be crucial to informing wellbeing support. Hegemonic masculinity may have a place in research on leadership and power relationships in the military, but for this study, social role theory offers a more relevant fit to evaluate the experiences of both male and female soldiers managing global stressors, of which male dominance is only one factor.

The selected models share the viewpoint that individuals are unique and their personal response to an environment can be dynamic and ever changing. Collectively they agree that biological, psychological and social factors all influence personal agency, resilience and wellbeing. These theoretical concepts have been used to inform how interpretations and explanations were developed. I have used them explicitly in the literature review, methodology and discussion chapters.

# 3 Literature Review

*'Voices from the field'*

## 3.1 Introduction

This critical review was pivotal in finding the most appropriate research position and methodological approach within the wider context of mental health, sexual behaviour and stress. The literature review was conducted as a narrative review which aimed to scope the body of literature to identify knowledge gaps, clarify concepts by summarising research findings and to confirm this study as original research (Efronet al., , 2015). Figure 1 explains how the literature review was structured using a strategy outlined by Ferrari (2015).

Figure 1: General framework of narrative reviews

| ***Framework*** | |
|---|---|
| ***Content*** | ***Describe the rationale*** |
| ***Structure*** | ***Organisation of the collected information*** |
| ***Limits*** | ***Define the objective(s) and scope*** |
| ***Search strategy*** | ***Keywords and databases*** |
| ***Inclusion / exclusion criteria*** | ***Types of studies, languages, time periods etc.*** |
| ***Concepts / Discussion*** | ***First key concept: discuss and evaluate, summarise in relation to the research query*** |
| | ***Next new concept: discuss and evaluate, summarise in relation to the research query*** |
| | *… new concepts to follow the same pattern* |
| ***Conclusions*** | ***Highlight the main points*** |
| | ***Connect with the research need*** |
| | ***Inform the research design*** |

* adapted from (Ferrari, 2015)

Content

This traditional approach aimed to draw on a diverse range of academic disciplines to include a variety of research methods and theoretical approaches. The narrative review sought to draw conclusions on topics related to this study and identify gaps or contradictions in the literature.

Structure

The literature review starts by reviewing what is generally known about the links between stress and sex. It then takes an orderly approach to reviewing the different concepts relevant to the research variables: stress; sexual functioning; OSA; and CSB. The structure was designed to focus on areas specific to the research questions, evaluating contradictions and gaps in current research that could be addressed by this study.

Limits

The literature review is contained within the context of the British Army and was focused only on studies that could contribute to knowledge in this field. Due to the dearth of literature related to the sexual functioning of service personnel, any papers that were considered informative and relevant were also included. Examples of this were papers on combat stress that contained details of soldier sexual response or behaviour. This helped build a wider picture of current evidence in the arena of psychosexual functioning in the military. Research on other critical occupations that were relevant to this research were also reviewed.

### *3.1.1* ***Literature search***

Figure 2 details the search terms using a number of academic databases. Google alerts were set up at the start of the research and continued to be used for naturally occurring data such as newspaper articles, documentaries and articles in the field of mental health and wellbeing. All search terms were prefixed with military or critical worker definitions to target research relevant to this field of study.

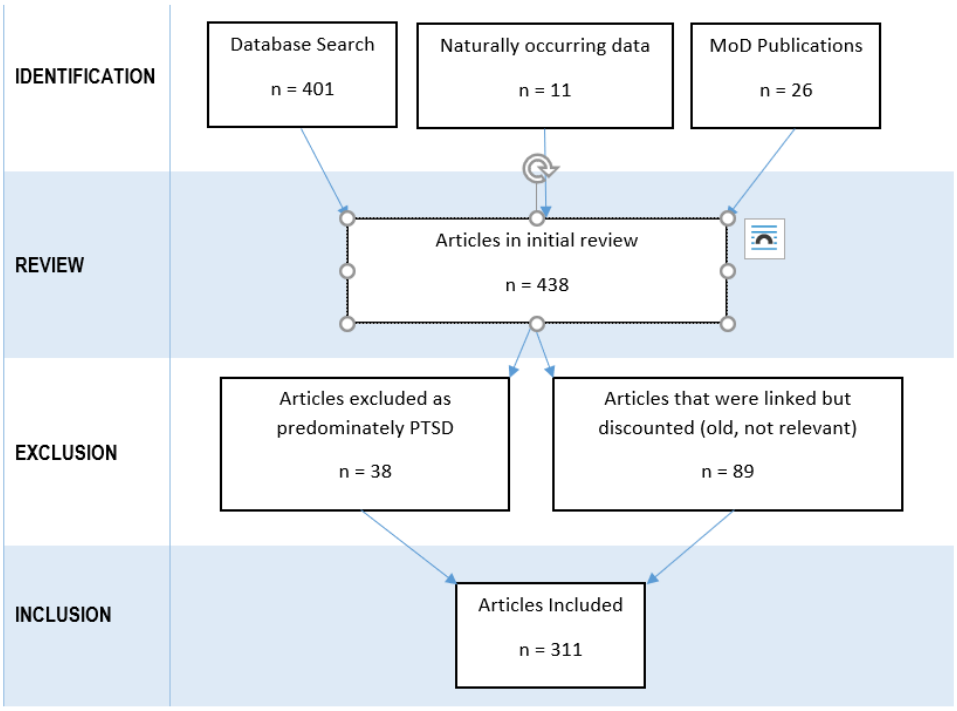
Figure 2: Search terms and database searches

| *Prefix* | *Search terms* | *Database searches* |
|---|---|---|
| *Military* | *Stress* | *University of Chester* |
| *Soldier* | *Sex* | *ResearchGate* |
| *Army* | *Sexual functioning* | *King's Centre for Military Health Research* |
| *Armed forces* | *Sexual dysfunction* | *KCMHR (Kings College, London)* |
| | *Intimacy* | *British library EThOS* |
| | *Mental health* | *MAG Online Library* |
| | *Wellbeing* | *Royal Centre for Defence Medicine* |
| | *Resilience* | *Medline* |
| *UK Police* | *Relationships* | *ProQuest* |
| *UK Firefighters* | *Culture* | *Google alerts* |
| *UK NHS* | *Organisational culture* | |
| *Critical workers* | *Risk-taking behaviours* | |
| | *Online sexual behaviour* | |
| | *Compulsive sexual behaviour* | |
| | *Ethics* | |
| | *Critical occupations* | |
| | *Pornography* | |
| | *Digisexual* | |

The focus was primarily on UK Military related articles; however, information on other armies were also reviewed along with international papers to offer a global perspective. Literature was reviewed up until June 2021. Articles were included if they related to the research variable and could contribute to the emerging picture of soldiers sexual functioning and behaviour in relation to additive stress. Articles were generally excluded if they related to combat, traumatic stress, veterans, spouses / partners, training,

A search was therefore undertaken for primary quantitative, qualitative, and mixed methods studies that were directly related to the research variables. From the literature, 438 articles and publications were selected to be screened for eligibility. 137 were later excluded due to being predominately combat, trauma-focused or outside of the field of this research study. In total, this left 311 publications for review (refer to Figure 3)

Figure 3: Flow diagram detailing the literature selection and excluded articles




## 3.2 Key voices in the field

Whilst there many academics and researchers cited within this literature review, a number of voices stood out as keenly aligned to this study's rationale in relation to military stress, intimate relationships and sexual behaviour, which emphasised the need for this specific research.

Professor Mady Segal (Segal & Segal, 1983; Segal, 1986) is ubiquitous within the literature. Segal's work on the military and their families as greedy institutions was referenced and referred to in many global papers on military families and relationships. Offering a universally accepted view that the family and the workplace can compete for an individual's resources, Segal started a vital conversation regarding demand on personal capacity and its impact on resilience.

Dr Mary Keeling demonstrated understanding of British soldier mentality and offered several cross-sectional in-depth papers that capture lived experience in regards to military relationships (Keeling, 2014; Keeling et al., 2017; Keeling et al., 2015; Keeling et al., 2017). Keeling has frankly discussed romantic

relationships, partner impact and the help-seeking behaviour of UK armed forces personnel.

Assistant Professor Sherrie Wilcox is a key voice in the field of psychosexual research, tackling the difficult conversation of sexual functioning and behaviour in the US military (Wilcox et al., 2013; Wilcox et al., 2015; Wilcox et al.,, 2014; Wilcox et al., 2016). Wilcox is leading the conversation to bring the sensitive issues of soldier sexual difficulties in relation to military service to the fore.

Professor Kirstin Mitchell stands out as a major contributor to sex research in the UK, bringing vital data into the arena, well-publicised and accessible to all (Mitchell, 2008; Mitchell et al., 2017; Mitchell, Geary, et al., 2016; Mitchell, et al., 2016; Mitchell et al., 2013; Mitchell et al., 2012; Mitchell et al., 2011; Mitchell et al.2014). Mitchell has supported the design and validation of the first population-based measure of sexual functioning for the third British National Survey of Sexual Attitudes and Lifestyles (Natsal-3), offering a wealth of validated sex data for comparison and behavioural analysis.

## 3.3 Military stress

It is widely recognised that being in the military is a stressful vocation (Dolan & Ender, 2008; Jones et al., 2012; MacManus et al., 2014). With high-tempo work, frequent separation and operational commitments, personnel are at greater risk than most of developing a broad range of mental health concerns (Bartone, 2006; Jones, Twardzicki et al., 2013; Keeling, Bull, et al., 2017; MacManus et al., 2014; Negrusa et al., 2014; Stevelink et al., 2019).

Since the high-profile campaigns in Iraq and Afghanistan, known as Operations Enduring/Iraqi Freedom (OEF/OIF), interest in the mental health of British Army soldiers has been an area of intense research. Whilst some academics have focussed on stress related to combat (Hourani et al., 2006), armed forces personnel are known to be exposed to elevated stress as part of routine training and occupational demand, which can contribute to stress-related psychopathology (Bray et al., 2001; Frone & Blais, 2019; Gould et al., 2010; Lin et al., 2015).

Whether at war or in peacetime, soldiers are still trained to be ready for combat. Sharma and Sharma (2012) make the critical point that this training is responsible for teaching soldiers how to override their flight or fight response; to run towards danger when human instinct seeks to run away. So, whether soldiers are engaged in combat or training for readiness, the destabilising impact of overriding biological functions can impact on how a soldier recognises and manages stress.

### 3.3.1 ***Psychological stress***

Lazarus and Folkman (1984, p. 19) describe psychological stress "as a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being". Often referred to as the allostatic load (the wear and tear on the body as it copes with mounting stressors), there is growing recognition that occupational expectations, including the physical, emotional and cultural demands, generate unconventional stressors unique to the military (Dolan & Ender, 2008; Sharma & Sharma, 2012). It is not just the magnitude but also the regularity of strain that augment pressures that impact on wellbeing (Campbell & Nobel, 2009, Greenberg, Langston, and Gould,2007).

Notable work by Campbell and Nobel (2009) offered a different stratum of specification for occupational strain; specific stressors (predominately occupational role-related strain), global dimensions (which combine work demands with social support) and psychological outcomes (emotional response and mental processing). Within the military, each one of these bands have work-related cultural and psychological implications that impact how a soldier might respond to stress. Such simplified approaches were challenged by Harvey (1999), arguing that stress responses cannot be generalised with an individual's own experience dictating appraisal and consequent reactions.

Similarly, Dolan and Ender (2008) investigated how soldiers managed their military stress to measure the efficacy of coping mechanisms. It concluded that it is the *appraisal* of stress that triggered the personal resource choice and consequential biological response to threat. Research by Harvey (1999) on

stress in military personnel breaks that appraisal into primary and secondary processes based on theories by Lazarus (1966). Primary appraisal assesses the psychological and physical threat of harm, whilst secondary appraisals deduce what resources will be used to meet that threat. Soldiers who present to therapy are often unaware of the severity of their own declining wellbeing and believe themselves to be strong enough to cope with the demands placed on them. There is no evidence of research asking soldiers how they experience stress on an individual level or where they may be coping well.

### 3.3.2 ***Defining stress***

There is a broad spectrum of conceptual approaches to define soldier stress. The cognitive transactional model of stress implies that there is interaction between the stressful situation and the individual, which is rooted in a person's measurement of the challenge being faced (Mitrousi et al., 2013). The British soldier has a physically demanding role where control of emotion is critical (Nicholson, 2009). Trials by Keeling, Bull, et al. (2017) describe a lack of understanding at an individual level regarding symptomology and cause that can inhibit the appraisal process. Soldiers can relate to feeling distressed for example but may not have the knowledge to recognise that problematic behaviour is linked to mental health. Stevelink et al. (2019) add that those personnel who may self-identify with mental health disorders, are not always prepared to do anything about it.

The military actively recruits soldiers from a range of socioeconomic backgrounds, some of which are susceptible to mental health concerns. Bricknell and Ross (2020) state that one of the major reasons for medical discharge from service is problematic mental health, accounting for nearly 30% in the British Army discharges, which could be avoidable. In periods classified as peacetime, self-reported psychological ill-health remains a concern (Jones et al., 2006).

Research by Iversen et al. (2007) showed that 76% of all soldiers had two or more vulnerability markers related to adverse childhood experiences, such as hostile home environments, parental addiction or problems at school, raising the risk for predisposition to psychological complaints. This is noteworthy given

that only those without a history of mental health symptoms are welcomed into military service.

Research by Hourani et al. (2006) showed that 32.3% of soldiers interviewed reported *a lot* of stress at work, with 18.0% showing *a lot* of stress at home. From this combined cohort, 28% reported these stressors interfered *a lot* with productivity at work reinforcing the fact that work and home stresses become intertwined. A useful study, although it is difficult to decipher what *a lot* means for an individual in self-reported studies renders it impossible to quantify. Plus, details were not provided on what proportion of those soldiers were stressed both at work and home or whether it was isolated stress at one place.

There is some evidence that couples become accustomed to the pressures associated with serving in the Army. Adaptive processes such as problem-solving, social support, compassion and forgiveness are firmly associated with marital satisfaction (National Defense Research Institute, 2007). Karney and Crown (2007) researched what was termed as the *adaptive processes* of relational interaction; that is how couples are able to effectively communicate, problem solve, scaffold and understand one another, arguing that stress measurement for some personnel could come from couple assessment. Karney and Crown (2007) emphasised the accumulative effect of managing non-military circumstances such as finances, children, healthcare coupled with the unique demands of service life. Allen, Rhoades, Stanley, and Markman (2010) add that it is the strength of a couple's adaptive processes that will determine their marital resilience to such widespread stressors.

### 3.3.3 ***Tempo***

Tempo in military terms refers to the pace and weight of workload related to Operations, OPTEMPO. More recently, there have been arguments to expand this definition to cover the rate of workload in other settings such as routine work in Garrison and during periods of training (Thomas et al., 2005). From 2003, the British campaigns in the Middle East, OEF/OIF marked the onset of sustained period of high intensity conflict with approximately 130,000 British Armed Forces personnel deployed. Operational duties were more frequent, lengthier,

with hundreds of fatalities and critically injured personnel (Jones et al., 2016). At that time, the tempo of operational demand was higher than it had been at any time since the second world war (Ministry of Defence, 2019a). Despite this, British soldiers did not develop a high number of combat-related psychiatric disorders (Iversen et al., 2007) and mental health resilience remained high when compared to civilian statistics (Hunt et al., 2014; MacManus et al., 2014). It would have been interesting to have compared this operational data against those soldiers in barracks who were managing the multiple demands of rear party provision, looking at the benefits of social support systems and perceived threat.

If stress measurement is directly related to whether the individual believes that they have the resources to meet that threat, then the pace and volume of work becomes critical to coping. In her research, Harvey (1999) refers to work overload in terms of both quantity (how much there is to do) and complexity (how difficult the work is to complete). Both criteria are independent and provide varying degrees of stress, depending on the individual's capacity to cope with each factor. Kumar and Jain (2012, p. 4) add the concept of control to the formula, stating that an "individual's locus of control influences the appraisal of stressful event and perception about the mismatch between job demands and job resources". This suggests that those personnel with a greater sense of control, manage their stressors in a more healthy way. Hourani et al. (2006) confirms that as armies in the west continue to cut their numbers, the direct impact will increase work for the diminished workforce.

If there are fewer personnel to manage the same operational commitments then there will be an exponential increase in tempo for the individual, adding strain. In today's Army, regardless of tempo, soldier mental and emotional wellbeing remains critical to operational capability (Bricknell & Ross, 2020). Military commentators have reported that soldiers have begun pushing back against the occupational demands placed upon them, by choosing to leave the Service, unwilling to continually uproot their families to undertake new challenging postings (Nicholls, 2019).

To support soldier wellbeing, the British Army introduced individual harmony guidelines (Hunt et al., 2014; Rona et al., 2007) which, by 2016, restricted time away from the home base to no more than 415 days within a 30 month period. These parameters, linked to nights out of bed (NOOB), were enforced to prevent burnout and were proven to have a preventative effect against psychological distress (Hunt et al., 2014). However, as armies become more sophisticated and conflict has become more complex the work demands have increased (Greenberg et al., 2007). At a time when Full-Time Trade-Trained Strength (FTTTS) numbers are in decline and retention is challenged (Nicholls, 2019), the pressure on the individual soldier may continue to mount.

### 3.3.4 ***Routine occupational pressures***

Much of the international research on military stress has focussed on combat-related stress and the impact of conflict. Less is known about the routine stress experienced by soldiers in peacetime. Most of a soldier's career will not be spent deployed. Pinder et al. (2010) found that during times of low intensity conflict, 20% of soldiers self-reported high scores against psychological distress markers. These stressors are not always problematic, but they are an indication that elevated mental health issues are omnipresent.

Outside of operational commitments soldiers and their families are exposed to a circular process of relocation, training, separation and reunion, which is very different to their civilian counterparts (DeCarvalho & Whealin, 2012; Nicholson, 2009). Whilst couple contentment is not the responsibility of the Army, it is important to accept the significant part that the spousal / partner relationships play in soldier effectiveness. Keeling et al. (2015) also note the sizable impact that relational discord has on soldier physical and mental wellbeing as well as occupational effectiveness.

Occupational stress theories such as the effort-reward imbalance argue that there are adverse effects on wellbeing when individuals do not feel that they are adequately rewarded for their workplace efforts (Kinman, 2019). A broad literature review by Brooks and Greenberg (2018) evidenced that this imbalance contributed to declining psychological health in military personnel

whereas appreciation contributed to improved job satisfaction. Looking specifically at low deployment periods, Jones et al. (2006) reflected on the links between self-reporting poor wellbeing and each soldier's contentment at work, finding that there was a prevalence of psychological distress in the military with female soldiers associated with increased risk. Fear et al. (2009) however, focused on a different demographic which demonstrated significant correlation between rank and mental health and reviewed how perceptions of job control and demand impacted on a person's wellbeing.

Hourani (2006) studied soldiers in the US, looking at the links between stress, mental health and job performance. This study found comprehensive links between stress, productivity and mental health, finding that younger personnel and lower ranks felt stress more acutely, and nearly a quarter of military personnel met criteria to suggest further mental health assessment would be helpful. There were no assessment results that identified where military and family stress had been managed well, which could have offered valuable insights into effective coping strategies.

With increased operational demand, reduced staffing and fiscal implications; today's service personnel still attempt to balance their finite resources when it comes to commitment, loyalty, time and emotional energy (Allen et al., 2010; Gimbel & Booth, 1994; Melvin et al., 2015). Ferguson et al.(2015) refer to the process of *crossover* identifying the impact of organisations on intradyadic relationships.

### 3.3.5 ***Soldier resilience***

The effort-rewards imbalance model is generally based on static roles and is rarely considered in relation to ever-changeable roles where leadership, workload and personal expectations can shift at short notice. Such unsettled and unpredictable occupations can place extra strain on personal resilience (Brooks & Greenberg, 2018). Nindl et al. (2018) found in a workplace where many soldiers have little control over their day-to-day roles, the theory of coping becomes more important to maintaining resilience. What was interesting about the results of this study is that active coping (using social support and positive

rethinking) was related to improved psychological wellbeing, whereas passive coping (avoidant behaviours) did not. Nindl et al. (2018, p. 1116) also chose to separate military resilience away from personal resilience and define it as “the capacity to overcome the negative effects of setbacks and associated stress on military performance and combat effectiveness”. This institutional outcome-led perspective offers a reminder that Army demands are unique where failure to manage stress and remain effective, has potentially life-threatening consequences.

Military life also has a significant impact on forces families as partners are subjected to many of the social and organisational expectations. Drummet, Coleman, and Cable (2003) imply that some partners are pushing back against the high level of organisational demands forcing the Army to rethink their role in managing partner stress. Cramm et al., (2018) concur, recommending greater awareness of family processes, recognising that couples share beliefs and combine meaning making. Whole family resilience appears to be crucial to soldier wellbeing (Arditti, 2015). This broader thinking does need to consider how you marry two differing approaches to psychological support, with soldier and partner wellbeing often managed through separate support structures.

There are also many overlaps between resilience and the construct of coping. Ippolito et al. (2005) explore the concept of active and passive coping in relation to occupational demand and job control suggesting that individuals have much control over their own regulation of resilience. Harms et al. (2013) debate the idea that characteristics such as grit and hope are moderators for coping and protectors of resilience. Both concepts offer the premise of personal governance – that as humans, we manage our own adapting and adjustment processes. These studies account for the difficulty in stress diagnosis, recognising that symptoms do not always present immediately, and soldier rotation makes longitudinal studies challenging for academics researching stress.

Experience has proven that as a race, humans are resilient to a huge amount of trauma, loss and disaster (Southwick et al.,, 2011). Much like stress concepts, the true understanding of resilience is not universally understood and

has different interpretations based on social and cultural interpretation. In military terms, it is important to distinguish the specific considerations of service life. Nindl et al. (2018, p. 1116) explain what they described as “volatile, uncertain, complex, and ambiguous (VUCA) environments accompanied by physical exertion, cognitive overload, sleep restriction and caloric deprivation” illustrating that resilience capacity is tested more keenly in certain arenas.

### 3.3.6 ***The role of leadership in additive stress***

For all personnel, good leadership is a crucial part of the military support network and a regulator for managing stress and wellbeing (Brooks & Greenberg, 2018; Harms et al., 2013; Jones et al., 2012). Army policy states that solider welfare is the responsibility of the chain-of-command with medical clinicians in support (Hunt et al., 2014), with good leadership being intrinsic to positive mental health.

The British Military are renowned for forging world-leading command skills in extreme working conditions, recognising the importance of relationship building, trust and respect in influencing others (Laurence, 2011). MacManus et al. (2014) offer several viewpoints on leadership and the impact of cohesion and morale on individual wellbeing. Jones et al. (2012) reviewed 34 articles aiming to understand how service personnel have managed to remain resilient despite lengthy periods of high-intensity conflict (HIC) and exposure to traumatic events, offering evidence that positive leadership is correlated to lower mental health problems.

Recognising that there is a new type of operational military environment, Sharma and Sharma (2012) focus their insights on what they refer to as low-intensity conflict (LIC) being the current norm. This operational status is more attuned to this research’s target sample. Recognising that this less mission focussed era is still accompanied with military stressors, such as unpredictable working patterns, invisible enemies and fresh political considerations. Leadership has a direct impact on how soldiers cope with these stressors. In 2019, only 22% of service personnel rate their Unit morale as high (Ministry of Defence, 2019c) with 63% reporting as feeling under-valued by their service.

This represents a significant number of soldiers, suggesting there needs to be a greater understanding of soldier contentment and happiness.

Work from Bartone (2006) in the US agreed, with more recent evidence from the UK that good leadership is a vital component of stress management and resilience hardiness. Unfavourable work settings contribute to the prevalence of mental health disorders (Martins & Lopes, 2013). Research by Frone and Blais (2019) looked at Canadian forces and showed links between organisational stressors and soldier fatigue. This research highlighted that pressure related to stress-induced symptomology could be attributed to role ambiguity, work overload and abusive supervision". Restricted to experience measurement, it was able to demonstrate positive correlations between work fatigue and greater work-family conflict but accepted that more research had to be done to understand causal effects, including leadership.

Looking at factors such as unit cohesion, morale and trauma management, statistics suggest that the British Army is managing its responsibility to mental health well, with military mental health concerns comparable to the general population (Hunt et al., 2014). This positive news has focussed on how mission-specific wellbeing concerns are supported but it does not address the impact that general life in the military has on mental health, despite whether soldiers have been exposed to earlier trauma. Greenberg et al. (2007) discussed this in their paper, accepting that cohesion and solid support impact on a soldier's psychological state, but again, this research relates to post-combat assessment thus leaving a need to address strain in barracks.

Leadership is a fundamental part of a soldier's stress response and coping abilities, either being facilitators of education and awareness or contributors to the pressure (Dolan & Ender, 2008; Frone & Blais, 2019). Feeling exhausted with work pressure impacts on organisational outcomes as military morale, errors in thinking and retention judgements are all influenced by mental wellbeing (Frone & Blais, 2019). Ferguson et al. (2015) offer the helpful view of leaders as resources, explaining that both organisational and supervisory influences can be viewed as powerful support. Collectively, the literature review argues that good leaders equate to job satisfaction, organisational commitment

and mood improvement which are then taken back home to the couple and family domain.

### 3.3.7 ***Military culture***

Viewing stress through a broader lens, society and culture is known to contribute to an individual's stress response. Culture is defined as a "product of the social environment which includes a shared sense of values, norms, ideas, symbols, and meanings" (Redmond et al., 2015, p. 10). The uniqueness of the military creates a culture centred on its masculine strength (for both male and female soldiers) having its own language and ways of working. The British Army openly acknowledges that being a soldier can be challenging and states

> "The demands of military service require a commitment from all officers and soldiers, beyond that normally expected from other citizens. Our Values and Standards sustain the British Army's ethos, provide structure to our organisational culture and govern our interactions with fellow officers, soldiers, allies, other combatants and civilians" (Ministry of Defence, 2018, p. 30).

For the families that live with soldiers and *follow the flag*, the experience of this distinct way of life, often draws them into the military culture too.

Redmond et al. (2015) explore why military life is so different to civilian culture, centring on the psychosocial demands alongside its extreme working environment. High profile campaigns such as the military's *Don't bottle it up* (https://vimeo.com/24527861) and the general NHS *Every mind matters* (https://www.nhs.uk/oneyou/every-mind-matters/) have raised the awareness of the prevalence of declining mental health and the importance of soldier self-care and professional support. These campaigns do not specifically mention stress or relationships, but they do contribute to education on declining wellbeing. With the most recent military research suggesting that one in three serving or ex-serving personnel are now accessing healthcare for mental health concerns (Stevelink et al., 2019), there is perhaps an increased awareness that it is acceptable for soldiers not to be okay.

Military culture is engrained from the beginning of basic training and soldiers are taught that they have signed up to becoming part of a wider military family. The “leave no man behind” mentality affirms a protection of its members. Within this culture, soldiers are taught about the history of the Army, customs, principle rules and values. Halvorson (2010, p. 10) comments on the concept of discipline, explaining some of the distinctiveness of military expectations to follow orders, “service members are expected to be disciplined in their actions and words and to maintain control of their emotions as well as their physical selves seemingly at all times”.

Dolan and Ender (2008) witnessed how these strict codes of conduct manifest themselves as soldiers work in environments where saying no is not an option. With the traditional type of wars becoming fewer, the British Army will find itself in longer periods of low-intensity conflict, yet “despite the vast technological advances that warfare is undergoing, its conduct will continue to be in the hands of human beings (the soldiers)” (Sharma & Sharma, 2012, p. 260).

### 3.3.8 ***How gender impacts on stress resilience***

Changes in the Army’s recruitment policies over the last 20 years have altered the demographic of the soldier population (UK National Statistics, 2016). With more emphasis on diversity, there has been a drive to recruit more females and increase the presence of ethnic minorities. Nicholson (2009) observed the conflicting arguments of these changes, with some viewing the evolution as insignificant and necessary and other, more conservative views, arguing that change at this pace could be damaging to the core ethos of the military.

Lorber (1994, p. 26) wrote that “it does not matter what men and women actually do; it does not even matter if they do exactly the same thing. The social institution of gender insists only that what they do is perceived as different”. In 2018, female soldiers became eligible to apply for all roles within the British Armed Forces offering them equal access to training and opportunity. In 2019, the first female soldier was recruited into what is considered the ‘elite’ Special Air Service (SAS) followed shortly by Captain Rosie Wild who joined the Parachute Regiment (PARA’s) in 2020 (Baker, 2019; Beale, 2020). These were

significant milestones for the future careers of female soldiers and marked a fundamental change in gender roles on the frontline. There was a recognition across the Army that there are many strategic operations that require the skills of both male and female soldiers and the historic discourses of women in the military continued to be challenged (Woodward & Duncanson, 2016; Woodward & Winter, 2004).

Despite these ground-breaking changes, female soldiers have remained a minority in numbers and continue to face several challenges unique to their sex. As critical observers of gender in the UK military, Woodward and Duncanson (2016) cite evidence of women entering into what is considered a non-traditional career, to be trained in roles that could be socially constructed as female. However, no commentary is made regarding whether this is a positive or negative phenomenon.

In an article on female soldiers, Hall (2018) openly challenged the socially constructed view of women as the fairer sex who should be protected and not out fighting wars. All these debates raise the question of how such emotive views impact on the psyche of females working in an institution where there is possibly more to prove, adding additional stress to the already demanding role. Bray et al. (2001) claim that women regularly present with higher stress and depressive symptoms than men. When researching female soldiers' sense-of-self and the shaping of identity through their careers, Davis (2012) found that personnel were deeply aware of the difference in gender, often holding themselves to higher standards as they sought respect from their male counterparts, refusing to settle for the standard expected by their sex.

The concept of equality is, therefore, complex and often viewed subjectivity within the military. Yet, when it comes to stress, evidence has shown that male and female's both behave and physically respond differently (Levine, 2002; Matud, 2004). Females are much more likely to end their relationships than their male counterparts (National Defense Research Institute, 2007) and can feel more overwhelmed by role overload and social network conflict (Nayback-Beebe & Yoder, 2011). This aligns with wider work by Matud (2004, p. 1411), who found that in general, females reported higher levels of daily stress, together with "more chronic problems, conflicts and daily demands and

frustrations". Although there was little difference with the number of life experience stressors, exposure to these events appeared to have a greater impact on females and were positively associated with increased health problems.

Research by Bridger, Day, and Morton (2013) looked at voluntary turnover of staff within a cohort of British Naval personnel and demonstrated that work-family conflict was higher for female junior ranks, with reduced scores for physical health and personal resilience. Results for all ranks of female personal proved the majority had a lower commitment to the Service, potentially due to perceptions of home role importance. This corresponds with research by Christiansen and Hansen (2015) who found that females were twice as likely than males to report trauma symptoms, such as neuroticism, panic and anxiety. Work by Jones et al. (2006) cited being female as a major risk factor for psychological ill health. Comparisons between male and female soldier stress responses are lacking within the literature as the majority of studies focused on male behaviour. This was expected given that much of the research has centred on combat related experience but leaves a gap in the understanding of female susceptibility at a time where more women are enlisting.

Cannon (1932) defined the mechanism of survival as a *fight or flight* stress response. However, in more recent years, the female stress response has been studied from an attachment based perspective noting that women may be more likely to *tend or befriend* (Levy et al., 2019; Nickels et al., 2017; Taylor et al., 2000; von Dawans et al., 2019). Taylor et al. (2000) suggested that female caregiving processes related to self-protection of both themselves and their children could downregulate the sympathetic and hypothalamic-pituitary-adrenocortical (HPA) responses to stress, resulting in a more socially based attempt to meet potential threats.

It is accepted that gender does affect individual stress experience, symptomatic response and resilience (Balhara et al., 2012). Research by Bray et al. (2001) indicated that nearly one-third of female soldiers experienced stress as a result of gender. Causes related to machismo, unwanted sexual attention or being ill prepared to cope with service life, plus often trying to balance the requirements

of motherhood. In contrast to the stress experience of females, male soldiers have other considerations unique to their gender. Keeling (2014) writes about masochism and the impact of proving masculinity through sexual promiscuity and other male endeavours that are culturally ingrained. This study demonstrated that as rank increases (and perhaps power), the need for men to sexually prove themselves became less. These macho cultural implications were explored in more detail by Sharp (2016, p. 105) who described "aggression, strength and bravado" as recurring traits linked to an acutely masculine identification of how to be a soldier. Few studies explored the impact of training for violent combat activities and the stress response of being scared, whilst trying to maintain strength and heroism. Although Mankayi (2010) observes a nuanced separation between masculinist and militarist, arguing that these male characteristics are a vital component of any warfare – regardless of sex.

Bray et al. (2001) offer the only widely published research specifically measuring family stress alongside work stress broken down by gender. Results showed that both men and women experienced more stress from work (39%) versus their families (22%) with women feeling more stress from home than men. Discussions looked at whether that was due to gender norms; feeling more responsibility for parenting or home commitments, with separation being felt more acutely by women.

Eagly and Wood (2012) make the point that differing disciplines will target certain research areas: biologists will look for hormonal and physical difference, sociologists might explore social hierarchy, economics may focus on human capital concepts. However, there is little discussion on how social role theory informs the female experiences of working in a male dominated arena. This is particularly interesting in a time in history where women manage the pressures of traditional home-making and nurturing roles together with managing a successful career whilst competing for promotion (Bingham, 2015).

It was disappointing to view the number of articles that stratify data but do not account for sex difference. Fear et al. (2009) for example, discount researching differences by sex as the numbers were too small (approximately 10%) to

include. A comprehensive literature review by Brooks and Greenberg (2018) only mention sex difference in relation to female stress once. These examples reflect current research where the unique differences between male and female personnel are largely overlooked. Yet, the wider literature suggests clear differences in biological, psychological and social responses.

### 3.3.9 ***The Army and the family as greedy institutions***

Over thirty years ago, Mady Segal (Segal, 1986) spoke of the conflict between the needs of the Service and the pressure from home. Segal (1986) wrote passionately about the personal pressure of the soldier and the balance of trying to manage two greedy institutions, the military and the family. Referring widely to German-American sociologist, Lewis Coser, the paper explains the commitment and loyalty required for any social institution to survive. Where there is competing demands, the finite resources of an individual can be exhausted.

Research in the Netherlands sought to understand how job induced separation contributed to relationships conflict within the Dutch Army. Anes, Moelker, and Soeters (2012) concluded that work–family conflict was significantly associated with relationship satisfaction. The study included research in retention of soldiers and explored the psychology of deciding when to the leave the military as a result of the additional pressures a soldier might experience. Very much aligned with the work of Segal (1986), Anderson et al. (2011) also recognised the personal stress and conflict of trying to meet the demands of both work and home.

Desivilya and Gal (1996) picked up on the work of Segal and Segal (1983) and Segal (1986), by conducting an in-depth residential study with Officers (OFFR's) and Non-commissioned Officers (NCO's) of the Israeli Defence Force. The study aimed to measure work-family conflict in military couples. Key statistics showed that 22% of couples showed healthy adjustment to military life with 78% reporting some struggles with balancing the competing demands of work and home. Outcomes demonstrated the positive impacts of emotional regulation in couples, the value of recognising and dealing with conflict, thus

creating healthy coping regimes. Although both of these studies are over 20 years old, many recent studies echo their early results, recognising the importance of family resilience alongside soldier resilience (Arditti et al., 2011; Melvin et al., 2015).

The Army's hierarchy, culture and operational commitment reduces the capacity for leaders to be flexible in relation to the considerations of familial need, making leadership efforts more complex. However, Ferguson et al. (2015) offer valuable learning into why organisations should be concerned with partner/spousal contentment, evidencing that satisfaction at home is associated with satisfaction at work. More importantly, if work is causing relationship distress, unhappy partners apply pressure to enforce change, directly impacting on soldier retention.

This was acutely evident in the 2019 Armed Forces satisfaction survey results, which stated that a key influencing factor for leaving the Service was due to the impact on their personal life and family, with 62% of personnel citing this as a concern (Ministry of Defence, 2019c; Nicholls, 2019). Analysis of how specific work experiences influence sexual and relationship satisfaction showed no direct link between work itself and intimate relationships. Instead, it connected dissatisfaction at home to what it described as, mediators, such as over-arousal and an inability to concentrate (Barling & Macewen, 1992). Despite this being a dated research project, this was a well-defined study that narrowed to four specific aspects of work: job insecurity; role ambiguity; role conflict; and job satisfaction. The interesting aspect of this paper is the notion that work doesn't impact on home life directly, but it is the individual stress response to challenges at work that interfere with healthy interpersonal relationships and undoubtedly inhibit natural sexual response.

### *3.3.10* ***Gaps in the military stress literature***

The mental health of British soldiers is continually reviewed and researched in order to promote resilience and wellbeing (Keeling, Bull, et al., 2017). More recently, focus has been on trauma management and combat stress, but there is growing recognition that non-deployment activity, or jobs that apply both

physical and mental pressure, can contribute to declining capacity to cope with occupational demand (Bridger et al., 2013).

Whilst there is a wealth of data on post-traumatic experience, gaps remain in the analysis of routine stress specific to the military. There is conflicting data on risk factors for stress, with some studies focusing on specific demographics (rank), symptomology (depression) or behaviours (drinking, smoking, risk-taking) with many authors excluding key group analysis, such as sex and age. In particular there is a need for females to be represented more in studies on both military stress and psychological, emotional and behavioural response, recognising that the female stress response, culture, and general social role context is different.

The literature does not evidence any new creative ways to assess soldiers stress, with much research focusing on stress experience after the event, as opposed to looking forward to stress prevention. Equally, many studies focus on poor stress response, looking at causality and high-risk factors. There is limited evidence of exceptions where soldiers are functioning well, demonstrating robust stress appraisal and the effective use of personal resources.

More research is required to understand how soldiers experience stress outside of combat, complete with causal and preventative factors. With British Army personnel numbers exceeding 70,000, attention should be paid to at-risk groups to enable targeting psychoeducation and stress management support.

## 3.4 Soldier sexual functioning

Historically, sex research has focussed on deviancy, masturbation and contraception (Bancroft, 2005). This was followed by studies into the biological pathology of dysfunctions, omitting the social and contextual factors of inter-personal relationships and sexual satisfaction (Mitchell et al., 2013; Morokqff & Gillilland, 1993). Research has evidenced that not all sexual difficulties cause distress (Hendrickx et al., 2019; Mitchellet al., 2016). Yet, we know that sexual function is a critical contributor to happiness and QoL and can conversely have

a detrimental impact on wellbeing (McCool, Theurich, & Apfelbacher, 2014). Models such as the New View (Tiefer, 2001) and Dual Control (Bancroft et al., 2009) have emphasised the multidimensional aspect of sexual functioning (refer to chapters 2.3.3 and 2.3.4) and have underlined the need for appropriate understanding and diagnosis of sexual difficulties that also include the appropriate examination of social and cultural factors.

Whilst early research focused on physical or biological models of sexual functioning, most academics and clinicians now accept that individual experience all contribute to sexual difficulties. The works of Gagnon and Simon (1974) tabled the notion of sexual scripting which has helped shape a more social constructionist view of sexual conduct opening up a wider perspective on behaviour and meaning. Researchers such as Mitchell et al. (2011) have been able to use the model of scripting to explore and define human sexual experience suggesting that individuals have three levels of sexual script: cultural, interpersonal and intrapsychic. For soldiers in a strongly meshed community, strong cultural aspects such as masculinity may contribute to the scripted templates that govern attitudes towards sexual drive, engagement and satisfaction.

Soldiers are at risk of developing sexual functioning disorders as they are more likely to be exposed to traumatic events, high intensity occupational demand and at increased risk for mental health complaints (PTSD / mood disorders) and physical strain or injury to the lower body (Farmer, 2014; Wilcox et al., 2016). Combat stress is known to contribute to sexual difficulties threatening the standard of happiness and wellbeing in soldiers (Breyer et al., 2014). Whilst short-term problems are expected following high intensity conflict, it is important to understand what maintains them. Kotler et al. (2000) debate that it is difficult to assign sexual difficulties solely to traumatic stress, given that other psychological disorders are often present. Anxiety, emotional detachment, panic and depression, all of which inhibit the neurological responses required for healthy sexual functioning. Add to this the pharmacological treatment for many of these symptoms there could also be a medical reason for symptom severity.

Wilcox et al. (2014) found that in male soldiers in particular, sexual performance dissatisfaction was known to reduce self-confidence and a sense of masculinity, critical for their role, which often perpetuates the symptoms leading to further mental health concerns. In this study, the links between mental strain and sexual difficulties outside of combat exposure are not explored. Clifford and McCauley (2019) appear to offer the only recent UK research paper that specifically looks at psychosexual therapy (PST) in relation to military personnel. They look at the historical views of men as 'warriors' and the concept of masculinity recognising that for the military, declining sexual function can have a direct impact on identity and sense of self. Clifford and McCauley (2019) accurately describe the process of psychosexual therapy (PST) treatment in line with current UK best practice in support of commonplace presenting issues, although it does not address how women are supported with similar concerns.

Research in the US showed that OIE/OEF veterans demonstrated a strong link between sexual difficulties and quality of life (QoL) (Badour et al., 2015; Nunnink et al., 2012). Helmer et al. (2015) discussed the psychosocial impact of poor sexual function, including injury to emotional and behavioural self-cognitive perceptions and relationships. When looking into the lived experience of military personnel, Keeling (2014) discussed sexual difficulties in relation to the pre-enlistment vulnerability of childhood adversity (maltreatment, abuse or trauma) on soldiers, which is known to manifest as decreased sexual desire and wider marital disharmony in relationships. With many soldiers recruited from poorer socioeconomic backgrounds (Karney & Crown, 2007) predisposition to maladapted stress response and sexual functioning difficulties could be commonplace.

British soldiers are broadly fit and strong. Potential recruits with complex mental health concerns or physical impairments are sifted out of the recruitment process and soldiers are encouraged to stay healthy with regular exercise. Outside of physical injury, most soldier sexual difficulties are likely to have a psychogenic basis. Many papers do not separate the organic (biological and always present) from psychogenic (related to psychological health) sexual difficulties, although there are a body of academics that argue these two things

are not exclusive to each other, intimating that all psychological responses have a somatic origin (Lewis et al., 2010; Sachs, 2003). Avasthi, Grover, and Sathyanarayana Rao (2017) suggest it is both: the drive to engage in sexual activity is motivated by a psychological and social need to attach to others coupled with an innate biological drive to procreate.

Whilst sexual desire is a basic human occurrence, it is volatile and can be readily extinguished (Leiblum, 2010). Outside influences can impact on couple sexual connection, leaving those experiencing sexual difficulties to feel inadequate, lonely or dysfunctional. For military personnel, the extent of potential contributors to couple disconnection is widespread, with separation, high workload, frequent moves and cultural pressures all adding increased stress on individuals (Anderson et al., 2011; Drummet et al., 2003; Padden, Connors, & Agazio, 2011; Palmer, 2008). Such pressures are not currently researched or assessed in relation to overall sexual psychological or physical health.

### 3.4.1 ***Defining sexual function***

In UK psychosexual therapy, clinical diagnosis of sexual disorders are currently defined using the DSM-5 and ICD-10 classifications that describe disorders that have been present for six months or more (refer to Table 1). Outside of this, many individuals and couple encounter sexual difficulties that may not be defined as a dysfunction but remain problematic and could be an indicator of other pathologies. Over recent years there has been a rise in the number of rating measures created to assess sexual dysfunction, behaviours and sexuality with many focused on specific aspects of the complex sexual functioning cycle. In their review, Grover and Shouan (2020) list over 68 different measures making the selection of appropriate assessment measures and clear definition of difficulty complicated for clinicians, researchers and academics.

In the UK, sex research has been advanced by the introduction of the National Surveys of Sexual Attitudes and Lifestyles (NATSAL) in 1990. Having completed its third cycle in 2010-2012, these surveys have been widely used to

inform sexual and reproductive health policy in Britain. There is limited research that specifically compares the NATSAL sexual functioning measure with workplace stress. One of very few studies looking at stress and sex used seven indicators from the National Study of Sexual Attitudes and Lifestyles (NATSAL) 2000 to explore differences in sexual functioning between countries. Findings evidenced significant differences in sexual difficulties, with Norwegian and Croatian samples reporting levels related to a lack of sexual interest of 33.5% and 30.5%, respectively, when compared to Portuguese men (16.9%). Parenthood was proven to be a protective factor with fathers 'over 30% less likely to have experienced sexual health difficulties than their childless peers' (Štulhofer, Traeen, & Carvalheira, 2013). This could potentially be at odds with the arguments from Segal (1986) who suggested that increased strain at home might contribute to individual pressure. It also once again defines sexual functioning as a complex human process closely connected to psychological, biological, social and cultural experience.

Other UK based research showed that nearly a quarter (23%) of people are dissatisfied with their sex lives, with almost a third (32%) having experienced a sexual difficulty (Relate, 2017). Moreover, with 15.9% of men and 22.2% of women claiming they are sexually inactive (Ueda & Mercer, 2019), large clusters of individuals and couples could be struggling to find positive intimate connections.

### 3.4.2 ***Prevalence of sexual difficulties***

There have been many epidemiological studies investigating the prevalence and cause of sexual difficulties in the general population. Results show several causes for the onset of sexual difficulties; mental health decline, physical illness, medications or trauma to name a few (Helmer et al., 2015; Mitchell et al., 2013; Piazza et al., 1997). They also highlight the lack of research in men's sexual functioning outside of erectile disorders and low numbers of women's sexual difficulties in all areas (Lewis et al., 2010). Findings from the latest research NATSAL research (NATSAL-3) demonstrated how sexual attitudes have changed since the start of this century, with sexual frequency declining, risk-taking behaviours staying constant for men who pay for sex but risk-taking

behaviours lowering for unprotected sexual activity (Mercer et al., 2013). Results also highlighted the key message that sex in later life remains important to couples.

Research into the wider UK population by Burri and Spector (2011) suggest that 5% of British women experience sexual difficulties, with 15.5% reporting lifelong problems and hyposexuality (loss of interest in sex) experienced by over one in five women in their lifetime. McCool-Myers, Theurich, Zuelke, Knuettel, and Apfelbacher (2018) offer a much higher statistic, claiming that worldwide, over 40% of reproductive age women will have some form of sexual difficulty, with predictors varying from country to country based on cultural, societal and gendered norms.

Data on loss of desire or differing sex drives has been shown to have a negative impact for almost one in five couples (Relate, 2017). Research from Mitchell et al. (2013) showed that in their study 14.9% of men and 34.2% of women experienced reduced interest in having sex with their partner, with 4.8% of men and 12.1% of women reporting lack of enjoyment in their sexual experiences. Again, these varying statistical results show how nuanced research is in this complex field.

The US appears to have the largest presence in the research field of soldier sexual functioning. Nunnink et al. (2010); Nunnink et al. (2012); Breyer et al. (2014); Wilcox et al. (2013); Wilcox et al. (2014); Badour et al. (2015) and Wilcox et al. (2015) offered comprehensive studies in this sensitive research area.

Predominately linked to PTSD and the sexual behaviour of veterans returning from OEF/OIF in the USA. Results from Badour et al. (2015) showed that from a relatively small sample of 150 personnel, 63% experienced desire disorders, 62% arousal disorders and 12% reported erectile dysfunction.

Nunnink et al. (2010) agreed, claiming work with veterans demonstrated widespread relationship and sexual difficulties amongst young OEF/OIF soldiers. Whilst these studies did not offer a comparison for female personnel, they demonstrated the significant levels of sexual functioning concerns within

this veteran sample and supported the recommendation for sexual assessment as part of quality of life (QoL) measures.

Wilcox et al. (2015) also stated that sexual functioning difficulties were commonplace amongst military populations where there was no presence of combat-related trauma with erectile issues present in 15.7% of male soldiers (rising to 80% for those soldiers with PTSD). Results were able to show that for some sexual difficulties, military populations had notably higher levels of problematic concerns than the general civilian population. Looking at erectile dysfunction for example, age represented an important variance, with 36-40 year olds reporting twice the rate of civilian men. However, with figures for sexual difficulties widely ranging from 8% to 55% (Leiblum, 2010), it is difficult to compare populations or agree a generalised view.

In contrast, Breyer et al. (2014) offered a larger population size study (n=405,275) on Iraq and Afghan veterans categorising erectile dysfunction (ED), hypogonadism, premature ejaculation, male orgasmic disorder, hypoactive sexual desire disorder and other psychosexual concerns. Results showed little difference between rank, however, soldiers who were divorced or widowed experienced higher levels of sexual difficulties (9.6%) with a general increase in prevalence with age. Breyer et al. (2014) recorded soldiers with a mental health diagnosis as being three times more likely to experience sexual difficulties (7.2%) than those personnel without mental health concerns (2.3%). This broad review was able to analyse veterans who presented to healthcare clinics and accessed pharmacological support for mental health concerns, making it principally a study into physical response. It did not explore causality or capture any self-reported data; this highlighted the need for more research into the soldier lived experience and further investigation into subclinical analysis.

Reports in the British tabloids claim that 3,000 tablets for erectile dysfunction were prescribed to soldiers in 2019, with over 60 personnel seeking psychosexual treatment following active service (Andrews, 2019). However, this article is based on an American study and does not quote sources for its data. Actual figures are unknown and likely to be under-reported, but more

scientific studies do proffer that erectile functioning and accompanying desire disorder are not just an age or medical related problem, with up to 30% of young men affected (Nguyen et al., 2017).

There is a consesus in the literature that sexual difficulties are commonplace (Hendrickx et al., 2019; Mitchell et al., 2013; Nguyen et al., 2017; Štulhofer et al., 2013; West et al., 2004). What is also evident from the data, is that due to a wide variety of predictors, reported prevalance and cause are extremely difficult to accurately predict (Hayes & Dennerstein, 2005; McCool-Myers, Theurich, Zuelke, Knuettel, & Apfelbacher, 2018; McCool et al., 2014). Studies used a broad spectrum of measures and analysis and are therefore only able to offer one perspective on a multifacted and complication human experience. There is no data on the prevalance of sexual difficulties in the UK armed forces serving population.

### 3.4.3 ***Key determinants***

In systematic reviews by Spector and Carey (1990), West et al. (2004), McCool et al. (2014) and Chen et al. (2019), factors including age, socio-economic background, education, relationship status, and sex were reported to have an influence on sexual difficulties (McCool et al., 2014). The Dual Control Model proffers that individual physical and psychological harms such as stress can impair sexual excitement (Bancroft et al., 2009; Janssen, 2007). It also considers that the interaction between sexual excitement and inhibition can be affected by either threat of performance failure or performance consequences , therefore this review looked at key determinants such as age, sex, rank and separation in order to understand their role in performance or consequences and the healthy sexual functioning of soldiers.

#### 3.4.3.1 ***Age / Rank***

Age is proven to be associated with declining sexual functioning (Hayes & Dennerstein, 2005; Lee et al., 2016; Morokqff & Gillilland, 1993; Wilcox et al., 2014). Research has shown that erectile function becomes less efficient with age and that the female aging process including menopause can have a

significant impact on both female and male sexual function (de Frias & Whyne, 2015; Hickling et al., 2008; Levine et al., 2003).

Aside from the more obvious biological implications of aging, the literature was reviewed for possible inhibitors of sexual function in relation to age. In the military increasing age does correlate with rank as soldiers progress through their military career and therefore it is difficult to establish if sexual difficulties are purely related to the general response that the aging process has on biological functioning or whether difficulties are linked to increased pressure at work with rising promotion and increasing workload and responsibility. Conversely there was evidence that with increasing rank (and therefore age), some soldiers showed greater job control and lower stress (Fear et al., 2009) or less need to prove themselves sexually (Keeling, 2014), suggesting that aging in the military could actually be a protective factor for elevated stress and sexual inhibition. There is further evidence that older soldiers might become accustomed to the mental resources required to function in a demanding organisation (Fenton et al., 2001) which could credit healthy coping mechanisms more to age and maturity, rather than to the lower ranks of younger personnel.

Results from NATSAL-SF show that younger people are more likely to be impacted by negative sexual outcomes, such as unwanted pregnancies and sexually transmitted infections. Older participants spoke of an increased expectancy that satisfying sexual contact continued to be part of a healthy relationship (Mercer et al., 2013). There was evidence that young adults are not insusceptible to sexual difficulties. Mitchell et al. (2016) found that 9.1% of men and 13.4% of women in the 16-24 age range, felt they had experienced a distressing sexual difficulty that had lasted more than 3 months.

Studies across multiple subject areas do demonstrate a difference in perception and response to stress by rank. When considering impact of service life on the wider family, Rowe et al. (2014) were able to highlight NCO's as a rank group more likely to take a negative viewpoint of service life adding to the perception of discontentment and strain. Viewing commitment to service specifically through the lens of strain, Bridger et al. (2013) exposed widespread pressure

across the junior ranks where higher turnover rates and levels of elevated stress were pervasive. This was also evident in research by Wilcox et al. (2015) which demonstrated that young soldiers were at risk for sexual difficulties. This research centred on specific causality for ED in relation to male genital self-image and sexual anxiety but recognised it did not investigate other potential mediators specific to the military such as impact on relationships, workplace stress and tempo.

In the US, clinical results show that men between the ages of 18-59 had a prevalence of erectile problems of 9% rising to 52% for the 40-70-year-old bracket. Heruti et al. (2007) demonstrated the high prevalence of sexual difficulties in the general population. Hosain, Latini, Kauth, Goltz, and Helmer (2013) explored what this meant for OEF/OIF veterans with the aim of understanding how combat impacted on sexual functioning. Results for a sample size of 4,755, showed that a significant proportion of Iraq/Afghanistan veterans registered concern with sexual difficulty, ranging from 5.8% to 15.7% depending on age. Using the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) alongside key demographic data, (Hosain et al., 2013) were able to identify the most common issue as erectile dysfunction (63.5%) with risk factors differing between age groups. For younger veterans, marital status and post traumatic stress were significant risk factors whereas older veterans' susceptibility was related to hypertension and being separated or divorced.

Despite age being clearly linked to sexual difficulties for potentially differing reasons, new research has highlighted that regular sexual intercourse can be a protective factor for problems and reiterates the argument that sexual functioning should be part of wellbeing assessment (Koskimäki et al., 2008). No research was found on the impact of normalising non-perfect sexual encounters due to age-related factors.

#### *3.4.3.2* ***Sexual differences by sex***

There are differences in the way men and women experience sexual difficulties. Research by Moreira et al. (2008) present the most common problems for men

in the UK as premature ejaculation (20%) and erectile dysfunction (18%). Women reported loss of desire (34%) and lack of pleasure (25%) as their main concerns. This study is very similar in results to the work of NATSAL (Mercer et al., 2003; Mitchell et al., 2013) but Moreira only focusses on adults over 40 years old.

Additional factors outside of job itself, contribute to stress considerations for female soldiers. Evidence suggests that women have a greater risk of sexual harassment and sexual assault within the military and indicate that women display higher levels of mental health disorders (Berg & Rousseau, 2018; Maguen et al., 2011). Interestingly, although women juggle many stressors, family stress was unlikely to impact on work performance, according to Bray et al. (2001). Suggesting that the predominately female skill of multitasking, may support resilience when managing the global pressure of work and family life. Evidence also suggested that female soldiers had a healthy approach to emotional management, effectively utilising the support of other female soldiers and their social support systems (Davis, 2012), where service men feel the stigma of help-seeking more acutely, considered a weakness when working in a masculine culture (Keeling, et al., 2017; Williamson, Greenberg, & Stevelink, 2019). Finnegan et al. (2014) agreed, finding that women were less concerned with stigma and self-aware enough to recognise unhealthy emotions and behaviours.

**Female sexual difficulties**

Female sexual dysfunction (FSD) covers concerns from sexual interest or arousal, orgasmic as well as genito-pelvic pain and penetration disorders (GPPPD) (American Psychiatric Association, 2013; McCool-Myers et al., 2018). Female sexual difficulties are complex and is often misdiagnosed or undertreated (Bachmann, 2006). The most common sexual difficulty in women is loss of desire, with its pervasiveness occurring in middle age and its causality likely to be linked to relationship fracture, early trauma, menopause, poor physical or mental health (Bachmann, 2006; Burri & Spector, 2011; Kingsberg & Woodard, 2015). Burri and Spector (2011) found that the most common predictor for recent and lifelong FSD was low relationship satisfaction.

Conversely, good relationship health, sex education and daily intimacy were all protective factors.

Notwithstanding the studies linking sexual disorders to elevated stress, there is very little research on the sexual behaviour of women in the military or comparable high-pressured roles (Hamilton & Meston, 2013). Most research into female soldiers and sexual functioning relates to the maltreatment of women, such as sexual assault or harassment or historic childhood abuse, with very little known about how the unique aspects of how military service may impact on female sexual response and behaviour within partnered relationships.

Wilcox et al. (2016) presents the argument that more women are joining the worlds militaries and as such, are exposed to the risk of psychological and physical threats. Physical injury is known to lead to increased body dissatisfaction and loss of self-confidence, contributing to sexual functioning disorders. Psychological impairments such as traumatic stress, regardless of personal injury, have a known association with loss of desire and orgasmic disorders. Again, mostly focused on combat exposure, this study discussed educational vignettes of soldier sexual therapy in relation to physical complaints such as leg damage from an improvised explosive device (IED) blast or genital injury.

Bancroft and Janssen (2000) discussed the concept of vulnerability in relation to sexual functioning, describing the inhibition response as a central defence to a situation that is perceived as threatening. There is a body of evidence that demonstrates being in the military is in itself a stressful experience with female soldiers more likely than their male counterparts to experience gender-based discrimination, sexual harassment or sexual assault during their careers (Rosebrock & Carroll, 2017; Street, Vogt, & Dutra, 2009).

## Male sexual difficulties

Whilst the most salient measure of sexual functioning has been considered to be frequency (Långström & Hanson, 2006), often the most distressing, and a

regular presenting issue in therapy, is performance dissatisfaction. The most common sexual difficulty in men is erectile dysfunction (ED) (Lewis et al., 2010; Minhas & Mulhall, 2017). Often a biomarker for wider health problems, ED risk has been associated with socioeconomic background, education and lower incomes (Kaminetsky, 2008). Linked to the causal factors, such as poor health, depression and diabetes, which invariably impact on the healthy hormonal, vascular and neurological requirements for satisfactory sexual response. Soldiers, in the main, are young fit and healthy. Yet, research from Wilcox et al. (2015) report that almost a third of young military personnel experience ED suggesting that there is other less physically based contributing factors for this group of men.

Reports by the Canadian Armed Forces explored hyposexual desire disorders and painful sex in men under 65. Their findings showed 71.5% of participants stated a lack of sexual desire or pleasure with 40.0% experiencing pain or discomfort during intercourse. Emotional numbing was evidenced as the primary symptom to be independently associated with loss of desire or satisfaction (Parkwood Institute, 2019).

In 2001, administered by the Staff Periodic Examination Center (SPEC) of the Israel Defense Force (IDF) a large-scale (n=5836) optional ED test was included as part of the normal wellbeing screening assessments occurring every 3-5 years (Heruti et al., 2007). For men aged 22-55, results showed 26.9% of men had experienced ED, with a wider 50% of all general low score personnel seeking help for other sexual disorders. This is the only defence force reporting on sexual health screening results as part of their routine fitness assessment and offers a valuable insight as to the positive effects of raising awareness both for patients and clinicians (Heruti et al., 2007).

#### *3.4.3.3* ***Separation***

A phenomenological inquiry by Baptist et al. (2011) discussed the lived experience of deployment as a contributor to closeness and intimacy in relationships. Sharing stories of couple experience, there was a sentiment that preparing for deployment, the fear of death or injury and separation all helped

strengthen the marital bond, theoretically increasing sexual excitation. However, for those soldiers who experienced trauma, relationships were at greater risk of becoming strained and detached.

Busuttil and Busuttil (2001) investigated separation in the context of danger, recognising the difference between working away where there is threat to life. Soldiers report concerns of reunion and expectations that can be unrealistic and result in disorganised coping strategies. The importance of organisational support and responsibility is emphasised, suggesting that reunion and reintegration should be supported when managing soldier wellbeing within the context of relationships and family.

Some couples reported being able to switch off their sexual needs in order to cope with separation (specifically deployment) which hindered intimate reintegration on return (Baptist et al.,2011). Again, this study did not stratify by sex and there was no evidence on how female soldiers may experience separation and its impact on sexual re-connection. In addition, those people who never lived with a partner displayed lower sexual functioning than those who were cohabiting, suggesting that life stage and relationship status also had an impact on sexual response (Mitchell et al., 2013). For the military, many young soldiers live on Barracks, ‘in the block’ in single of multi-occupancy rooms, as Army housing is only available for married couples. This therefore means, younger, lower ranked personnel often live alone.

Cramm et al. (2018) agree that it is this strong organisational support that creates a coalescence of resources which underpin resilience and coping. Yet, there is the wider acknowledgement that separation and loneliness can create relational pressure and unhappiness. Hawkley and Cacioppo (2010) would expand this notion citing the growing body of research that proves how physically detrimental loneliness can be, resulting in cardiovascular, blood pressure and early mortality risks. Similar in cognitive alterations and physical symptomology, social detachment alters the ability to perceive stress and manage healthy stress appraisal.

Separation can be a barrier to intimacy and hinder communication between couples (Allen et al., 2010). A known contributor to stress, separation in the military is an accepted responsibility (Bartone, 2006) but one that causes the greatest dissatisfaction with service life (Drummet et al., 2003; Harms et al., 2013). Reviewed as a normative stressor, Cramm et al. (2018) add that separations create transitions, role fluidity and reintegration processes that can only be maintained with healthy family support and without adequate resilience can contribute to declining wellbeing.

### 3.4.4 ***The correlation between stress and sexual functioning***

From a scientific perspective, stress relates to a "cognitive perception of uncontrollability and/or unpredictability that is expressed in a physiological and behavioural response" (Koolhaas et al., 2011, p. 1292). Stress can be a helpful motivating force (McGonigal, 2013) but, in prolonged conditions, it can increase activation of the sympathetic nervous system, known to cause long term health conditions which may interfere with the vascular and neural health required for satisfactory sexual functioning (Trigwell, 2005).

Hamilton and Meston (2013, p. 3) explain in lay terms how "hormones released from the hypothalamic-pituitary-adrenal (HPA) axis in response to stress can interfere with hormonal secretion from the hypothalamic-pituitary-gonadal (HPG) axis, which is involved in the control of reproduction and sexual response". In short, increased stress hormones interfere with the production of sexual hormones and are known to reduce sexual desire and arousal response. Studies into the stress response may also indicate that men and women experience endocrine changes and stress response differently (Levine, 2002).

Healthy relationships mitigate against stress and poor sexual functioning (Morokqff & Gillilland, 1993). Whilst healthy couples are known to engage in more sexual activity, it can also be argued that more sexual activity can create deeper bonds between partners creating unity and reducing stress. In studies looking specifically at the link between stress and sex, all found a correlation between increased stress and sexual difficulties (Bodenmann et al., 2006; Hamilton & Meston, 2013).

Whilst there is much evidence for the negative link between post-traumatic stress and relationship satisfaction (Gerlock et al., 2014; Melvin et al., 2015; Monson, Taft, & Fredman, 2009; B.Negrusa & Negrusa, 2014), there is little known about routine stress and its impact on interpersonal relationships. It is reported that soldiers generally marry younger due to financial incentives such as housing, but then find themselves displaced and under unique familial stress (National Defense Research Institute, 2007). Through the complexities of Army life, partners often become each other's primary source of stability and emotional support (DeCarvalho & Whealin, 2012). Partners also invest in military life and accept the additional pressures of deployment, relocation and cultural rules, often without considering the true impact of disruption on couple intimacy (Negrusa & Negrusa, 2014).

Morokqff and Gillilland (1993) ran a small study looking at the correlation between stress and sex in a group of Washington residents in the US. With the data collection occurring in the 1980's this study is one of very few to analyse how stress impacts on sexual functioning. Morokqff and Gillilland (1993) found that for men, age was associated with frequency of intercourse and daily stressors were associated with frequency of desire for intercourse. This study may have been compromised by ambiguity in definitions given the acceptance that sexual terminolgy can be confusing for participants (frequency of intercourse, desired frequency of intercourse, frequency of sexual desire) but does demonstrate how lower level stressors (hassles) can accumulate and impact on sexual functioning. Demographic analysis showed that female participants recorded a marginally different experience, with age as the major contributor to decling sexual satisfaction. Stress and hassles also impacted on desired frequency of intercourse for women at a similar level with frequency of sexual desire and stress showing a more significant correlation. This study is particurly significant for this research as it has many parallels, specifically discussing routine stress in relation to sexual behaviour.

Occupational demands may impede that family resilience, particularly if communication with home is unavailable (Keeling et al., 2015). Greene, Buckman, Dandeker, and Greenberg (2010) offer a balanced view of how

partner interaction can both boost morale and improve wellbeing but can also add stress, specifically when support is absent, or home demands increase pressure. They offer the analogy that describes regular communication with home during periods of separation as a *double edge sword*. This premise could be overlaid to any relationship interaction; when relationships are nourishing, they offer a beneficial support system and when they are unhealthy, they contribute to poor wellbeing. Arditti (2015, p. 10) refers to the same phenomenon, “we are reminded that intimate and family relationships can be developmental contexts for both harm and resilience”.

It is not just soldier separation from the primary family that causes stress on military relationships. Frequent moves away from the wider family adds pressure with many partners losing their social support networks. Referred to as *sojourners* by Blakely, Hennessy, Chung, and Skirton (2014), research showed the unique and transient lifestyle for Army partners has varying positive and negative effects. In civilian research, the main reason for job relocation refusal is family concerns. Understandable when you consider the evidence for failed expatriate relationships and the significant financial costs to the organisations that support them (McNulty, 2015). For military families, the refusal of postings or job relocation is rarely an option.

Sexual satisfaction was related to marital harmony for both the particpant and their partners (Morokqff & Gillilland, 1993). In research by Mitchell (2008, p. 143) looking at sexual functioning and measurement, participants spoke of “trust, warmth and feeling wanted” and a comfort zone in relationships, suggesting that it is psychological security that fosters sexual intimacy and improved excitation. Keeling (2014) cites ‘intermittent husband syndrome’ as a possible causal factor to declining sexual connectedness, which in this context, suggests that it is the partner and not the serving member who is struggling with stress and sexual discord. How the soldier experiences that separation and disconnectedness is not discussed.

### 3.4.5 ***The benefits of British Army service on romantic relationships***

In much military research on mental health, there is a focus on the military role itself contributing to causation and prevalence. However, Finnegan et al. (2011) offer a refreshing reminder of the many benefits of serving in the British Military. These range from professional development and financial security to camaraderie, a sense of belonging and pride in their role.

There is regular concern in the British press about the state of soldier relationships. Some partners openly claim they feel like single parents as their soldier is *married to the Army* (Brown, 2014). However, there is little evidence to suggest that Army relationships suffer any more than their civilian opposites with divorce rates lower across the military than in the UK population (Keeling, Wessely, & Fear, 2017).

Often mental health research seeks to explore clinical issues or concerns and negates to focus on healthy well-adjusted behaviours. There are, however, many positive aspects of Army life on the family and the couple. Supportive aspects range from a sense of belonging, financial security, robust welfare and medical treatment to pride in serving their country (Finnegan et al., 2011). Karney and Crown (2007, p. xxv) also spoke of soldiers finding operational commitments “meaningful and fulfilling” with soldiers glad to be using their comprehensive training to protect the nation they serve.

The Army also offer greater levels of emotional and familial support than that found in civilian communities. Keeling et al. (2015), Karney and Crown (2007) and (Saltzman et al., 2011) agreed, commenting that those families who had been supported well, developed healthy coping strategies, thus creating positive relationship experiences. However, soldiers have to want to seek help and feel comfortable to ask for it. Overall, when researching romantic relationships in the UK, the majority of British soldiers claimed that military life and its unique pressures did not impact on marital satisfaction or stability (Keeling et al., 2017). Intimacy as a concept is often ill-defined and sexual relationships rarely feature in discussions around marital satisfaction. In a cohort of young, physical soldiers where the culture is defined as overtly

masculine, commentary on the benefits of good sexual relationships are scant. More research is needed to understand military couple relationships in relation to intimacy and how building couple resilience may mitigate against poor workplace perception.

### 3.4.6 ***Gaps in the soldier's sexual problematic behaviour literature***

To date, research on sexual functioning in the Army has not accumulated enough data to establish or define a coherent understanding of how sexual difficulties affect soldier resilience, happiness and wellbeing. There is evidence that problematic experience is influenced by sex, age and rank and more information is required to identify at-risk groups within the military populations.

Some studies are able to look at sexual functioning in relation to QoL which is helpful in understanding its significance to personal happiness and the impact on an individual soldiers' system (relationship, family, workplace). But more research is required to define how sexual functioning symptomology could impact on wider stress-related concerns and potentially be a marker for psychological distress. Evidence is required to provide a greater understanding of soldier declining sexual functioning causality. The literature showed much sexual functioning research on a global platform with an absence of information on British soldiers outside of PTSD studies. These papers offer a recognition that military service can directly impact on sexual functioning and relational intimacy and therefore discussions in the arena of sexual behaviour outside of combat trauma could offer a helpful new perspective on soldier wellbeing.

Sexual functioning, at-risk sexual behaviour and relationship breakdown were not present in most of the studies that looked at self-reported common mental health concerns, post-operational trauma or other occupational psychological injury. Relationship breakdown was referred to within one study by Keeling et al. (2017) but only in terms of Unit Welfare Officer's unsympathetically suggesting that relationship issues could be an excuse by malingerers rather than a wider, more complex wellbeing concern.

The literature on stress in relationship to sexual functioning underlines the importance of individual experience and tables the many determinants that can influence a healthy biological and psychological response. Mental health problems and sexual functioning are axiomatic and well researched (Basson & Gilks, 2018; Morokqff & Gillilland, 1993), yet discrepancies in the definition of sexual functioning make it difficult to compare studies (Mercer et al., 2003). What is known, is that sexual frequency is decreasing in the UK (Mercer et al., 2013) and sexual difficulties are increasing in military populations (Armed Forces Health Surveillance Center, 2014).

For some, sexual difficulties can be life-altering and directly impact on quality of life (QoL), self-esteem and intimate attachments (Breyer et al., 2014): however, many studies on QoL omit to measure sexual intimacy, preferring to focus on general relationship health. Research on veterans who were shown to have a lack of social support reported emotional numbing as a consequence of desire disorders, underlining the importance of connectedness in maintaining healthy sexual interaction (Badour et al., 2015). However, these relationship fractures were often attributed to combat related symptomology without assessing what other systemic factors could be contributing to poor sexual functioning. There may be proven links with PTSD and sexual disorders, but that does not preclude other factors as explained by Campbell and Nobel (2009) such as workplace stress (primary), marital discord or family pressures (secondary) or emotional capacity and resilience (tertiary).

Demographic characteristics are known to be predictive of sexual difficulties and should be used to stratify more data. In particular, difference by sex should be compared, with a recognition that biologically and psychologically, female soldiers may have a different response to stress and sexual functioning. Much of the literature focussed on either male or female experience of sex. In modern armies where there is social and political pressure for equality, there is perhaps a need for more research on the power and value of understanding and embracing difference in the context of mental health diagnosis and treatment.

The diversity of human sexual experience is regularly evident in the psychosexual therapy room, where hundreds of individuals and couples will

present every year with a handful of known sexual clinical disorders. Yet the number of possible interventions, treatment decisions and subsequent client outcomes will be endless. Collectively, the literature demonstrates a hugely complex public health matter that is prevalent in the population. What is missing from these investigations thus far, is specific research into the impact of serving in the British Army in relation to sexual function and behaviour.

## 3.5 Online sexual behaviour

Bancroft (2005) writes openly about the prejudices and biases that have affected sexual health, suggesting that clinicians could be governed by the socio-political influences of their times, discussing whether sexual medicine has historically confused sexual experimentation with sexual morality. Difficult subjects such as abortion and birth control continue to make headlines, as does the rise of pornography and explicit social media use. Authors such as Twist and McArthur (2017) have written on the growing trend of technology-mediated sexual interaction, reinforcing the need to understand how online sexual materials, impact on behaviour, relationships and QoL.

Often depicted as negative to wellbeing, websites such as https://www.yourbrainonporn.com describe the chemical and physical changes that occur during sexual activity online from brain changes to porn-induced sexual difficulties. There is much research that proves poor sexual functioning outcomes for prolific users, linking OSA to a reduction in libido, emotional detachment and erectile problems (Hermand et al., 2020; Liu et al., 2020). Yet, Döring (2009) offers a critical review of published research suggesting that whilst research widely evidences risk, harm and deviance; some users report many benefits.

OSA becomes problematic when users begin to allow their online exploits to wholly replace their offline experiences leading to isolation and detachment (Griffiths, 2012). Moreover, when the experience of sexual activity online becomes invasive in decision making, committed relationships, finances. Grov, Grov, et al. (2011) found that partners of OSA users also experienced a decline in sexual motivation and lessening feelings of desirability, impacting on the

frequency of sexual intimacy. This research, however, was based primarily around white, well-educated males. More research is required on people from different social and cultural backgrounds.

Other papers agreed that OSA is linked to reduced sexual satisfaction and sexual difficulties such as, ED, anorgasmia and loss of desire (Barrada et al, 2019). Hermand et al. (2020) explored this further reviewing a number of comorbidities for OSA, stating that while sexual difficulties were certainly linked, the motivation for acting out online was often driven by dissatisfaction in the primary relationship led by a desire to create a positive spike in mood. However, OSA use led to further detaching from their partners and a noted decline in libido. Hermand et al. (2020) did explore sex difference, noting that women were more likely to develop compulsions related to social media, but called for more research into discrete groups and longitudinal studies for causal analysis.

Hook, Hook, Davis, Worthington, and Penberthy (2010) offer a balanced argument that due to the complexities of sexual compulsions, it is difficult to establish causality. Many measures are self-reported which means that some individuals who will engage in compulsive sexual exploits online may not recognise their behaviour as problematic and others with disrupted lives (sexual difficulties, relationship problems) may attribute that behaviour to OSA when there could be many other influencing factors.

### *3.5.1* ***Defining OSA***

OSA is decribed as the use of the internet for engaging in any activity of a sexual nature (Liu et al., 2020; Shaughnessy et al., 2011). With the advancement of technology, sexually explicit material has become easily accessible, with over 200 million websites online (Cooper et al., 2000). For many young adults, the internet has been an integral part of their sexual development and social relationships (Cooper et al., 1999; Klein & Cooper, 2019)

Barrada et al. (2019) are clear in their work, that not all OSA is the same. They stress the importance of recognising the difference between controlled use of OSA and problematic behaviour. For some, OSA offers a safe place to explore

their sexual needs without judgement. Delmonico and Miller (2003) describe three distinct types of OSA behaviour: isolated; social; and, perhaps the most troublesome, compulsive. Research by Barrada et al. (2019) looking at the OSA behaviours of students using the Delmonico and Miller (2003) Internet Screening Test (ISST) found that isolated and social behaviours were correlated with greater levels of wellbeing, but OSA behaviours related to compulsive activities created a preoccupation with sex along with lower sexual satisfaction.

The search for sexual connecting is both a complex biological and psychosocial phenomenon. In research by van Anders (2012), using testosterone as comparators for partner desire and solitary desire, there was evidence that the drive to seek out sexual interaction was based on hormonal factors and a need to connect, whereas isolated sexual behaviours could be attributed to habit, boredom and a want to improve mood. Cooper (1998) coined the *Triple A* theory behind online sexual behaviours as access, affordability and anonymity. All of which are available for soldiers who have a regular income, time away from home and ample Wi-Fi connectivity. OSA is recognised as particularly prevalent in younger groups as it is easy to access, offers anonymity and is generally low cost (Barrada et al., 2019).

#### *3.5.1.1* ***Isolated OSA***

Barrada et al. (2019) suggest that men are more likely to engage in OSA when compared to women, with men tending to favour isolated encounters while women seek more social engagements. Mitchell (2008) found that both men and women felt able to enjoy sex without a partner, within limits. For others, sex without inter-partner connectedness felt incomplete.

Pornography use in particular, has become a normal part of many western cultures with technological advances making it easily accessible (Willoughby et al., 2016). Figures suggest that 47% of UK relationship counsellors believe that clients are presenting with increasing numbers of problematic pornography use (Relate, 2017). Although, Willoughby et al. (2016) found that negative couple

outcomes were moderated when both partners accepted it as an accepted part of their sexual relationship.

The UK military has a clear policy which governs prohibited activity whilst using government information systems forbidding pornographic or illicit materials being accessed (JSP740). However, no formal education is provided on the possible negative consequences of using online sexual material in relation to personal harm, addictive qualities or relational impact. Pornography is discussed in terms of occupational parameters such as, security clearance concerns or sexual inappropriate behaviour in the workplace (Ministry of Defence, 2015). However, academic research in this field is also limited, with studies on British soldier sexual behaviours in short supply.

#### *3.5.1.2* ***Social OSA***

With almost all young adults (95%) having one or more social media accounts, the potential exposure to explicit sexual content is widespread (Klein & Cooper, 2019). Some studies suggest that females are more likely to engage in social or partnered OSA, seeking out sexual engagement (Cooper et al., 2000; Shaughnessy et al., 2011). This could be related to sexual scripts, as men are perceived to have strong sexual needs and motivations and acting out can enhance their social status, whereas women are seen to have less primal desires and expected to seek bonding and attachment (Shaughnessy et al., 2011).

Whilst many studies offer a negative view of OSA, more research is emerging that supports healthy online experiences, including links with pornography use and greater self-esteem or a vehicle for sexual expression (Barrada et al., 2019; Cooper et al., 2000). Many modern relationships begin online and OSA can feel very normal for some couples, offering a complementary addition to their sexual relationships (Barrada et al., 2019). A large scale probability sample using data from Elle magazine showed similar thinking, with respondents using OSA relationally to develop their sexual repertoire and improve communications skills (Grov et al., 2011).

### 3.5.2 ***The future of OSA***

In the field of sexual therapy and research, the ethical and social impact of technology based intimate engagement is becoming more prominent (McArthur & Twist, 2017). With the upsurge in the use of technology for sexual communication, evidence for problematic technology-mediated sexual interaction (TMSI) suggests that online relationships, including sexting and the exchange of explicit content, could be the two phenomena that require dedicated research in terms of education and therapeutic intervention (Courtice & Shaughnessy, 2017).

Furthermore, recent research has highlighted the rise in sales of virtual reality (VR) headsets offering interactive sexual experiences and multiplayer online role-play games (McArthur & Twist, 2017). That familiarity with online activity, combined with long periods away from home, affordability and access could suggest the number of digi-sexual users (those engaging in sexual activities online) is likely to grow.

It can be shown that being away from home increases the frequency of sexual risk-taking (Whitehead & Carpenter, 1999) which for many soldiers is a regular occurrence. Research by Liu et al. (2020) showed that 95.1% of their participants had engaged in some form of OSA in the last year despite perceived risk and infidelity being negatively associated with access. This non-random sample did not account for non-monogamous couples which may have influenced some of the findings, yet the scale of participation is still convincing, creating strong arguments for more research in this field.

### 3.5.3 ***Prevalence of OSA in military populations***

Statistics from US military personnel found that men (81.1%) used pornography considerably more than female personnel (39%) with over 9% of men viewing online content everyday (Berger et al., 2019). Although this study only centred on Naval service personnel, evidence did show significant correlations between pornography use and erectile dysfunction for men who preferred lone masturbation with pornography use (78%) to partnered sex (22.3%). Female sexual difficulties were not correlated to any variables in this study, suggesting

once again, that female sexual behaviour is different to males. There is currently no data on general online sexual activity in the UK military.

Wider general population studies estimate that between 20-33% of internet users will engage in sexual activity online (Cooper et al., 2002; Egan, 2000). In one of a small number of quantitative studies looking into OSA, Cooper et al. (2000) found that 32% of their large sample reported one or more areas of their lives that they believed had been negatively affected by their online sexual behaviour. This not only included a negative impact on their personal, social and recreation pursuits but also suggested implications related to their workplace.

Empirical evidence has highlighted that the frequent use of self-regulating and risk-taking behaviours in the military is widespread (Thomsen et al., 2011) and OSA users report that it does, temporarily at least, improve their mental state (Hermand et al., 2020). Furthermore, an individual's perception of online risk could be key to how people engage sexually online, those that are less afraid of consequences are more likely to access sexual material that could be damaging to their primary romantic relationship (Liu et al., 2020).

### 3.5.4 ***Gaps in the OSA literature***

OSA research in relation to British soldiers is scant. When reviewing data on general behaviours in peacetime, there were no academic findings to directly support this research study. Accepting that OSA is prevalent, whilst not always problematic, the elevated risk factors for soldiers to engage in damaging behaviours is marked.

As the use of technology increases and online sexual pursuits become more technologically advanced, over-stimulating and accessible, research in the correlation between stress, online sexual activity and residual feelings of intimate partner closeness could offer valuable insights into future soldier sexually related disorders, including compulsivity, sexual difficulties, partner disconnection and mental health decline.

## 3.6 Compulsive sexual behaviour

CSB has been described as an escape, usually as a coping response to stressful life events (Gilliland, 2015; Miner et al., 2007; Nelson & Oehlert, 2008). When a person's psychological capital or resilience is destabilised, then physical, cognitive and emotional functioning can deteriorate leading to emotional detachment and numbing (Nunnink et al., 2012; Pflanz & Sonnek, 2002). If that detachment is prolonged, individuals may find themselves feeling psychologically stuck or they may seek out new reward systems in an attempt to improve their mental state. It is this dopamine-search that can lead to mood-altering behaviours such as drinking, gambling, gaming and sexual compulsivity (Griffiths, 2012; Kalichman & Cain, 2004; Smith et al., 2014).

There is evidence that the Army attracts personnel with risk-taking, sensation seeking or impulsive behavioural traits (Iversen et al., 2007; Verrall, 2011). More associated with the lower ranks and younger soldiers, these characteristics are accompanied by poor self-regulation and a predisposal to mental health conditions. Verrall (2011) found that the military was able to offer sensation-seeking alternatives to more unhealthy risky behaviours, such as adventure training, recreational sports and combat training.

### *3.6.1* ***Defining compulsive sexual behaviour***

Historically there has been much debate on how to define problematic sexual behaviour; terms like sexual addiction, sexual compulsivity or impulse control disorder, all describe psychological out-of-control behaviours that are damaging to the individual (Derbyshire & Grant, 2015; Hall, 2011; Hermand et al., 2020; Hook et al., 2010; Kalichman et al., 1994; McBride et al., 2008).

Compulsive sexual behaviour disorder (CSBD) has been recently accepted as an impulse disorder within the forthcoming eleventh International Statistical Classification of Diseases and Related Health Problems (ICD-11, 2022) (Borgogna et al., 2021; Fuss et al., 2019). However, it is often used interchangeably other classifications include hypersexuality, sex addiction, out-of-control sexual behaviour, erotomania, nymphomania (for women)

and satyriasis (for men), sexual dependency and compulsive sexual behaviour (CSB). For some soldiers, these out of control behaviours do not extend beyond excessive masturbation and high levels of pornography use; for others, it can lead to illegal behaviours such as accessing unlawful online content (Smith, 2014).

CSB is present when those out-of-control behaviours are distressing and extend to damage an individual's sexual functioning, impair social connections or have negative legal or financial repercussions (Bancroft et al., 2009; Derbyshire & Grant, 2015; Hall, 2011). Predominately CSB behaviour is solitary which may have implications for soldiers, who through the new service accommodation model, may have moved from multiple occupancy to single rooms (Brooke-Holland, 2017). Whilst there is limited research in this area, the concept of low inhibition and high excitation could well be relevant in many CSB cases and should be further explored (Bancroft et al., 2009). This could be particularly relevant in relation to soldier risk-taking sexual behaviour where there has been evidence that personnel consider themselves *invincible* and so may not have the same inhibitory responses of those individuals who are not trained to push through the natural threat appraisal response (Whitehead & Carpenter, 1999).

### 3.6.2 ***Prevalence of CSB in military populations***

To date, there is no published statistics on the prevalence of CSB in British Army soldiers. Research by Kraus et al. (2017) looked specifically at post-deployment veterans and found that males had a higher levels of CSB related symptoms (13.8%) than female soldiers (4.3%). This was also evident in a study by Kalichman et al. (1994) which showed significantly higher rates for sexual compulsivity in males. Earlier studies of male veteran prevalence rates showed self-reported figures of 16.7% (Smith et al., 2014) although this study was only based on a two-item scale.

Prevalence in the wider civilian population is estimated at between 3-6% (Carnes, 1991) signifying that military populations may be at greater risk of developing compulsive behaviours. However, a systemic review of the CSB

literature demonstrated the wide variation between civilian studies and detailed how difficult it is to accurately predict prevalence rates (Derbyshire & Grant, 2015). With known associations to shame and the sensitivities that surround out of control sexual behaviour, it is suggested that these figures may be underreported with female responses scant in the clinical data.

Research into military veteran experiences showed that age was significantly associated with an increased likelihood of CSB (Smith et al., 2014). This difference may have been due to older veterans experiencing sexual compulsions as more troubling than younger people, perhaps linked to expectations of normative behaviour for specific age ranges and expectations linked to personal responsibility. Sexual compulsivity is also linked to an increased risk of sexually transmitted diseases, poor relationship outcomes and occupational problems (Kalichman & Cain, 2004). Many individuals who report compulsive behaviour, will also demonstrate higher levels of generalised distress and increased probability of disorder co-morbidity (Lee, 2012).

Differences by sex looking at the appraisal of risk, showed that women had a 10-15% higher level of risk estimates (Verrall, 2011). Stahlman et al. (2014) also found differences between men and women finding that binge drinking, substance misuse, and numerous sex partners were more prevalent in men. However, female soldiers reported greater STI's, uninvited sexual contact and several elevated mental health indicators. Yet research from Abel, Adams, and Stevenson (1996) argued that figures for female military personnel matched those of the wider female population.

### 3.6.3 ***Gaps in the CSB literature***

There are currently no published studies looking into the prevalence of compulsive sexual behaviour among British Army soldiers. Current data suggests that military personnel may be more susceptible to developing CSB however, with variations in study design and potential for underreporting, it is difficult to establish if these elevated rates for veterans are likely to be replicated in peacetime or whether they are more related to traumatic events. de Alarcón, de la Iglesia, Casado, and Montejo (2019) add to this argument by questioning

at what level sexual behaviour can be accurately defined as pathological or clinically problematic.

McBride, Reece, and Sanders (2008) argue that in order to fully understand compulsive behaviours, there is a need to both understand the construct itself and the manner in which it can be diagnosed. As experts in the field, Kalichman and Cain (2004) discuss sexual compulsivity as a heterogeneous psychological complaint that has many different aetiologies.

However, collectively the literature does tell us that soldiers are more likely to be risk-takers (Abel et al., 1996; Breivik et al., 2019; Thandi et al., 2015). Pertinent to this study, there is also a recognised correlation between risk-taking and sensation seeking (Breivik et al., 2019) which may impact on how soldiers seek out reward based behaviours, including sexual satisfaction. Across most studies, men were more likely to display CSB behaviours than women (Bancroft & Vukadinovic, 2004; Kalichman & Cain, 2004; Kraus et al., 2017) although data on female behaviour was limited.

Given the propensity for risk-taking, the expected separation and isolation through work commitments and the masculine culture of the military; the lack of data on CSB in military populations was unexpected.

## 3.7 Other critical occupations

Critical occupations are defined as “occupations that require their workers to deal with emergencies, disasters, and other traumatic events and their consequences” (Parrish Meadows, Shreffler, and Mullins-Sweatt, 2011, p. 41). Much like the published research on military stress, studies on other critical occupations predominantly centred on post-trauma (Bennett et al., 2004; Violanti et al., 2017; Wendy, 2008) with little research on routine or prolonged stress. Systematic reviews evidenced similar pressures on personnel due to operational demand and likely exposure to traumatic incidents, with an emphasis on the importance of personal resilience (Conway & Waring, 2020; Janssens et al., 2021). Busuttil and Busuttil (2001) explored the experience of other professions alongside the military (journalists, oilrig workers, commercial pilots) and agreed that the psychological effects of separation can be complex

and damaging with little evidence on how it impacts sexual relationships. Keeling (2014) compared the military environment to that of other civilian emergency workers recognising the synergies between managing a dangerous role that continuously pulls at personal resources and time away from the family and assesses that military personnel fair well. In statistical terms this may be true but with such a large cohort of staff, even small percentage changes can equate to sizeable concerns.

Review on police and fire service stress in relation to psychological wellbeing evidenced the biosocial impact of working in high-risk occupations including its impact on personal safety (Smith et al., 2019; Smith et al., 2018; Violanti et al., 2017). Biological factors such as sleep disorders, fatigue and raised cortisol levels were explored as well as psychological changes impacting mood, suicidal ideation and burnout. However, sexual functioning and behaviours were not included within the research mirroring the lack of research in the military arena. Research on Police officers centred on sexual harassment (Brown et al., 2018; Lane et al., 2010), exploring females as victims in a male dominated arena, but did not explore how those experiences shaped their view on their own sexual desire or functioning. Dubbed by Oweke, Muola, and Ngumi (2014) as a silent killer, gender was found to be a contributor to occupational stress

Iran produced one of only a handful of studies looking specifically at the links between work and sexual difficulties in nurses (Mokarami et al., 2018). Focused purely on men, results identified a significant correlation between increased work schedule and declining sexual functioning. Most nurses experienced mild-to-severe difficulties across all measures of sexual function, particularly related to sexual desire and overall satisfaction. Lee, Lung, Lee, Kao, and Lee (2012) recognised the impact of work-based effort-reward on sexual functioning in their research, stating that regardless of stress, those nurses who felt valued described an improved sex life and better QoL. Equally, Cheng, Kawachi, Coakley, Schwartz, and Colditz (2000) explained that for nurses, links to workplace strain, lack of control and inadequate social support were related to poor health status but did not review its impact on sexual functioning within intimate relationships.

Although at the time of writing, the world was still managing the impact of the COVID-19 virus, research on critical healthcare workers during the pandemic was beginning to emerge. Results detailed the impossible decisions and extreme work pressures placed on personnel, plus the perpetual threat of contagion during the highest levels of hospital admissions and deaths (Albott et al., 2020; Greenberg et al., 2020; Hammond et al., 2021; Walton, Murray, & Christian, 2020; Willan, King, Jeffery, & Bienz, 2020). Comparing the NHS experience to that of the British military, Greenberg et al. (2020) highlighted many synergies, such as the protective factor of good leadership and the psychological implications of giving orders that may result in loss of life. Walton et al. (2020) also focused on how military style interventions might support resilience discussing the contributory elements of a systemic wellbeing provision. Mehta et al. (2021) did refer to the impact on relationships and families discussing isolation and separation due to the long working hours and fear of infecting relatives; yet no research was found on how any of these extreme pressures impact on the sexual functioning or sexual behaviour of those workers.

## 3.8 Literature review conclusions

The literature review has demonstrated that research on military stress has been the focus of much attention since the Iraq and Afghanistan wars. However, studies primarily relate to post-traumatic stress. Given the knowledge that stress impacts on sex hormones required for healthy sexual functioning and reproduction (Morokqff & Gillilland, 1993), more research is required to understand how this theory applies to soldiers trained to push through their natural sympathetic nervous system function, potentially negating the clues for problematic stress and overwhelm.

Routine stress has not been explored in relation to soldier wellbeing and general mental health. Less is known about how prolonged stress and work overload contributes to intimate sexual attachments. Given the exceptional nature of the work stressors facing members of the Army, it is reasonable to assume that the

appraisal process and subsequent choice of coping strategies used to manage the stressors may also be unique.

The negative correlation between stress and sexual difficulties are discussed within the literature but has not been comprehensively studied within the military population, despite this being considered to be a high-pressured occupation. In particular, female soldiers' sexual functioning and behaviours are overlooked in much of the literature even though they now represent 10% of the workforce. Supporting military families means understanding their sources of vulnerability. Research on sexual functioning is missing or ill-defined in many military studies on relationships. Psychosexual support for clinically diagnosed disorders were only mentioned in one paper with much soldier research focussed on partner experience or general relationships.

With little meaningful data on sexual functioning during peacetime, accessing accurate and effective training materials could be problematical for clinicians. Given the highlighted risk factors for prevalence of work-related stress, separation, risk-taking behaviours, family conflict and poor mental health, soldiers have an increased probability of developing a clinically diagnosable sexual disorder as categorised by ICD10 or DSM-5 (refer to Table 1).

Maladaptive OSA is considered to be a growing concern for researchers across the globe. As known risk-takers, soldiers have not been accurately measured for problematic OSA use or the potential to develop CSB disorders. More information is needed to understand how current behaviour may inform education as sex and the internet continues to technologically advance. This is especially important for those soldiers who are isolated or separated from home and more susceptible to developing problematic use.

The literature review was able to support the need for the 6 main research questions by highlighting key gaps that will contribute to new, much needed, knowledge in this field. More information is required to support routine stress and to create preventative strategies for clinical assessment, education and treatment. Table 3 summarises the key gaps in the literature that this research aims to address.

Table 3: *Gaps in the literature to be met by this research*

| | ***Gaps in the literature to be met by this research*** |
|---|---|
| **MILITARY STRESS** | Could clinicians be more creative in the way they measure soldier stress?<br>How do soldiers perceive work-based pressures in relation to their intimate relationships?<br>Who is most at risk for developing stress-related problems? |
| **STRESS AND SEXUAL FUNCTIONING** | How strongly is stress associated with sexual functioning in British soldiers?<br>What contributes to inhibited sexual functioning?<br>How does the prevalence of sexual difficulties differ by gender, age and rank? |
| **ONLINE SEXUAL ACTIVITY (OSA)** | Is stress associated with levels of online sexual activity?<br>Does online sexual activity impact on feelings of connectedness and partner closeness?<br>Does living alone or away from the home increase online sexual behaviour?<br>Are soldiers engaging in OSA in high numbers? |
| **COMPULSIVE SEXUAL BEHAVIOUR (CSB)** | Is OSA associated with CSB?<br>As known risk-takers, does the British Army have high levels of CSB? |
| **WHY SOLDIERS MAY EXPERIENCE PROBLEMATIC SEXUAL FUNCTIONING** | Could sexual functioning be an early marker for wider psychological concerns?<br>Who is most at risk of developing problematic sexual difficulties?<br>What education opportunities are there for psychosexual therapy in the Army and broader UK military? |

Findings from the literature review will be used to inform how the main research questions are structured within this study to ensure that these wider considerations are measured. This includes the overarching investigation to understand if declining sexual functioning could be a predictor for resilience overwhelm and maladaptive behaviours. Within that, the research will ask 6 main questions on stress, sexual functioning alongside 2 clinical aims of identifying those soldiers who may be most at-risk of poor stress appraisal, work and home overload resulting in a decline in sexual satisfaction and relational connectedness.

# 4 Research Methods

*"Inside or outside the goldfish bowl?"*

## 4.1 Introduction

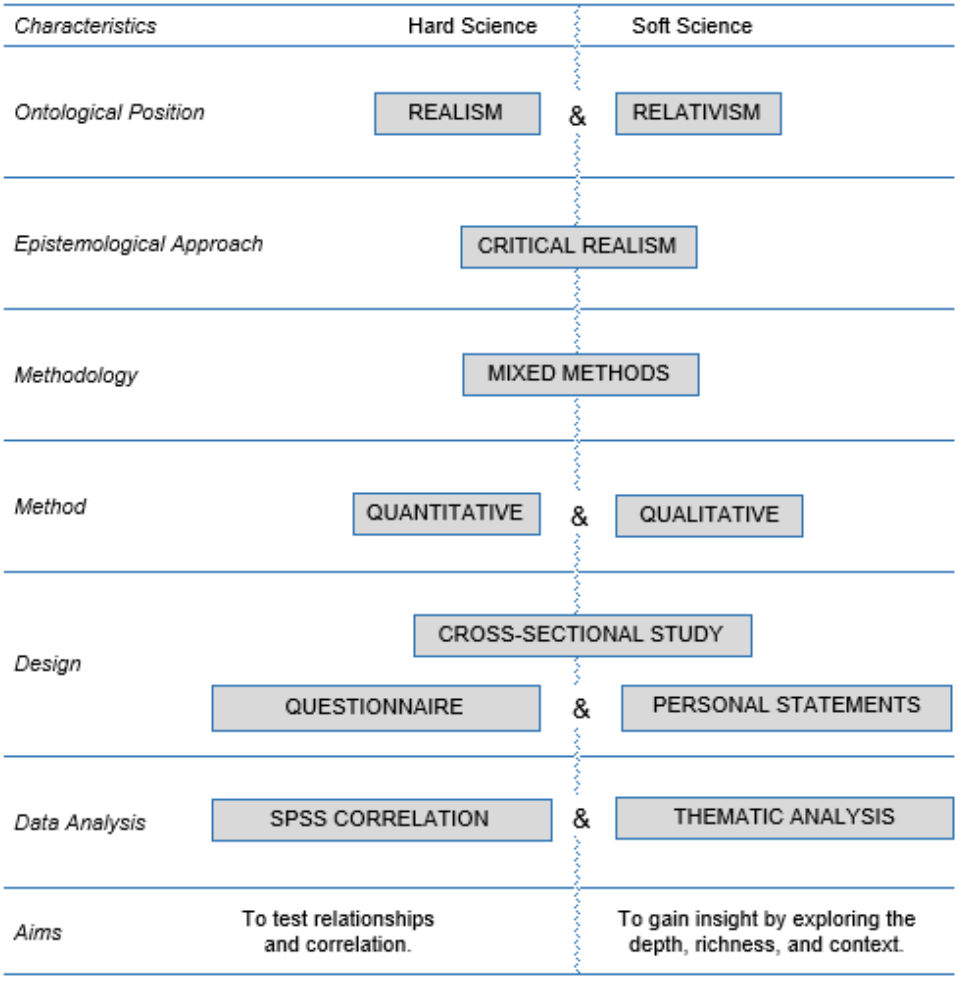
This chapter defines the methodological framework used to underpin this research study. It details how the ontological position and the epistemological approach were explored and defined. Stemming from an identified gap in UK field of military wellbeing, the research aimed to produce rigorous data that would be robust enough to influence policy decisions relating to psychological assessment and care across the Army. The evidence would be two-fold, the first looking at a global picture of perceived stress and sexual behaviour, the second collecting individual feedback on lived experience. As a mixed-methods research study, the research used both quantitative and qualitative inquiry to support statistical and thematic analysis. Informed by the methodical approach, it also explains how decisions were made in relation to the survey design, data collection, study population, recruitment and data analysis.

It is important to note that this research study originally expected to be weighted towards quantitative based enquiry and did not expect to collect a substantial amount of qualitative data. This explains why there is only two open-ended questions within the survey design asking soldiers if there was anything further, they would like to add in regards to stress or sex. These questions sought to give soldiers a space to discuss their own experiences should they elect to. However, the unpredicted volume and quality of responses caused a reappraisal of the research methods and attention was then given to the most effective way to analyse the data. A more equal mixed methods review was therefore conducted to allow parity between both sets of data and to allow for a more comprehensive merging process.

## 4.2 Ontological and epistemological position

When considering an ontological and epistemological position, there was a need to understand the type of knowledge this research aimed to produce. Led by 6 research questions and the clinical aims, the initial focus was to create a quantitative inquiry. Two open ended questions asked soldiers if they wanted to contribute any personal experience related to stress or sex, which created a high level of unexpected qualitative data. This placed the research between the ontological positions of realism and relativism with a hybrid study composed of both qualitative and quantitative methods. To understand how the knowledge would be created and assessed, a model was created to give an overview of the study's characteristics to consider the most appropriate research position (refer to Figure 4).

Figure 4: Research position



### 4.2.1 ***Critical realism***

Critical realism (CR) emerged in the 1970's following the work of Bhaskar (1975). Bhaskar (1975) first argued that the philosophical stances of scientific science and social science could be combined. As a meta-theory, CR offers this conjoined stance; by still claiming certain reality yet allowing for the possibility of other interpretations of knowledge. It is described as a philosophical position on a range of themes such as ontology, cause, viewpoints and forms of explanation (Archer, 2016). The literature categorises CR as either a philosophical model or as a means to "report on empirical research to explain social problems or inform policy" (Fletcher, 2017, p.182). As a model it argues that knowledge is socially created (Kock, 2015) and from an investigative stance it suggests "the ultimate objects of reality are causal mechanisms" (Yucel, 2018, p. 413).

Pragmatism is generally assumed as the primary philosophy of mixed methods studies due to its ability to mix perspectives (Johnson et al., 2007); however, the spectrum of interpretation felt unsuitable. Johnson et al. (2007) describe pragmatism as potentially being far right (favouring realism) or far left (favouring pluralism). This research aimed for a more balanced combination of both, statistical fact underpinned by context. Critical realism (CR) therefore stood out as more aligned to my personal worldview and therefore, in my view, a more appropriate position for this study.

When exploring ontology in relation to epistemology and aetiology, CR offered this research a world view that was truth but 'with a small t' (Fleetwood, 2013), that used the science of tendency, to replace fact or truth, considered to have 'a large T'. This stratified view re-enforces the benefit of CR and a belief in agency and a disbelief in absolute fact.

Whilst CR fits very neatly with my own ontological position, I am aware of the conflict of the definition of truth in research. Yucel (2018) for example, argued that if we begin to question scientific fact then there is a danger of undermining the credibility of scientific knowledge. Yet, there is an accepted opinion that even in science, researchers will hold a worldview that may shape the design

direction of experiments, how results are presented and how conclusions are located. My personal worldview is that every fact can be positioned in context in some form, as “knowledge does not exist independently of the subjects who seek it” (Olssen, 1996, p. 275). A view Yucel might define it as a causal realist (Yucel, 2018). McPhail and Lourie (2017) argue that some form of realism has a place in modern social science and that it should be possible to both understand the context of knowledge and causality and conditioning. CR understands the confines of what is empirically discovered and does not deny that “there is a real social world we can attempt to understand or access through philosophy and social science” (Fletcher, 2017, p.182).

When considering human research, it could be presumptuous to define any data as a true fact. Information is often far less homogenous than it may first present (Coolican, 2009). This notion formed the biggest driver when considering the ontological and epistemological positioning of this study. The research aimed to create a record of the thoughts and behaviours across related topics, to demonstrate robust links between variables, deciphered within a set philosophical paradigm.

Braun and Clarke (2006, p. 81) offer an effective description of sitting in between paradigms, but still offering a contextually based reality.

> *Theories such as critical realism acknowledge the ways individuals make meaning of their experience, and, in turn, the ways the broader social context impinges on those meanings, while retaining focus on the material and other limits of ‘reality’.*

### 4.2.2 ***Ontological position***

Within the field of ontology, there appears to be a historic view that quantitative research is objective, whereas qualitative work is subjective (Roberts, 2014; Saunders, Thornhill, & Lewis, 2012). However, this does not always fit neatly with complex research projects, such as those which seek to analyse research questions from different perspectives and can create tension when considering a mixed methods approach (Johnson et al., 2007). This created a need to marry

the philosophical paradigms of the researcher with the main objective of the study, which sat with the viewpoint that all data, including quantitative data, still had to be placed in context. This was important for this research because whilst knowledge of statistical links between variables could evidence positive or negative relationships, it could not offer knowledge on why those relationships might exist.

For this reason, a purely realist or relativist approach was discounted. The quantitative focus was to use validated instruments to provide reliable data that would allow for statistical inference of potential behaviours in the wider Army population. However, it was also acknowledged that any data collected would still be located in personal experience, the participants' view of military expectations for example. The qualitative data aimed to offer that context. Knowledge would not be deemed as fixed or separate to the world and would aim to consider all results within the context of the theoretical models, specifically the efforts-reward imbalance, the dual control model and the biopsychosocial approach. Therefore, an ontological position rooted in CR allowed for a reflexive view on what would be known and how it might sit within the social world (Archer, 2016; Rutzou, 2016).

### 4.2.3 ***Epistemological approach***

For this research, accurate study results were critical to underpin any argument for organisation review or change. A major outcome was to identify tangible evidence relating directly to future health behaviour and treatment. This fed into a bilateral approach which allowed for individual experience to be contextually located and reviewed objectively.

By producing a snapshot of current soldier experience, the study sought to highlight potential at-risk groups for harmful sexual behaviour and support discussion around how relationship and sexual conduct may offer an insight into wider mental health concerns. By understanding the ontological and epistemological view on what knowledge the research aimed to produce, the next step was to consider how to accurately measure it. In particular,

understanding the correlation between the experiences of stress, risk, emotional detachment and sexual behaviour.

The quantitative element of the research focussed on understanding experience in relation to other factors, such as how stress and sexual functioning are correlated. The qualitative element provided personal statements that could provide further context in regard to the military environment. For example, one major contextual consideration was the Armed Forces as a unique establishment. By its very nature, the military environment is an organisation that is dependent on its own people to succeed. Within its structure, it creates tiers and hierarchy which are embedded in its working ethos. From the moment someone 'signs up' they are expected to think, act and respond in a certain way.

Tajfel and Turner (1986) used social identity theory to explain how an individual's self-knowledge and self-esteem is a composite of both personal character traits and social identity, the group they belong to. Within the Armed Forces, that striving for group cohesion can sometimes contribute to less individuality and more depersonalisation (Pawiński, 2018). Members are expected to conduct themselves according to the rules and complete daily rituals that strengthen unity, offering a greater sense of belonging and a commitment to common aims (Watson-Jones & Legare, 2016). This example of contextual considerations aligns closely with the philosophical stance adopted in the research accepting that there will be context to participants' reality that will influence findings.

It could be assumed that when researching personal experience from such a welded group, that the knowledge gained might have some wider influence. Perhaps an organisational, familial or social bias. For example, soldiers are expected to be mentally strong, which is intrinsically linked to their performance. They may present as strong, have experience of being strong and believe the group-thinking that they are stronger together. But what does that actually mean to them as individuals and what are they measuring themselves against, where have they learned what strength means to their relationships? When considering CR, Yucel (2018, p.408) directed researchers to 'critically assess

the credibility of scientific knowledge claims through understanding of how science operates in a cultural context'. Allowing for this type of exploration into personal context allowed for critical reflection and explicit dialogue around the knowledge that would be produced by this study.

## 4.3 Researcher reflections

Understanding research methodology in the context of this sex research did not come easily to me. Mostly due to the fact that my philosophical, ontological and epistemological positions appeared to be at odds with the type of research I aimed to conduct. As a single researcher investigating a large sample of soldiers, the study lent itself to quantitative data collection.

Coming from a psychodynamic and systemic background, I have spent many years counselling clients under the pre-text that there is not one truth, that early childhood memories, social influences and individual experience frame our perspectives and that often useful change is brought about by neuroplasticity, the ability to positively re-structure a cognitive position based on a viewpoint and mind-set. It was hard to write about true fact in a quantitative sense when there was a natural desire to search for context.

During this time, I read an article on methodology and it asked, are you inside the goldfish bowl swimming with the fish and feeling their experience or are you outside the goldfish bowl measuring what you see? (Killam, 2015). I felt that I needed to be both.

Whilst it was challenging at times, the process of reflection and exploration led me to the conclusion that a mixed-methods approach sat much more neatly with my own methodological and professional position and was the most suitable platform from which to analyse the data. This led to the emergence of a CR framework which on a personal level, felt stronger, more robust. The research study was able to produce the substantial data required for correlation analysis but also allowed for meaning and context to underpin those findings. It also forced me to closely reflect on my own research position and how that impacted

on study decisions, perhaps suggesting that whatever the results, I would have always looked for human perspective.

## 4.4 Method

After researching the common types of method within the field of psychology and social science (Braun & Clarke, 2006; Clark-Carter, 2010; Coolican, 2009; Dewing, 2008; Meyer, 2000; Willig, 2013; Winter et al., 2002), a number of approaches were discounted. There was a need to provide a framework of research that could offer a helicopter view of the unique stressors, perhaps considered and merged as both context-less and context-focussed.

Data were collected by a single questionnaire design which allowed for quantitative statistical data via a scored and validated survey to provide data suitable for correlation analysis. A qualitative component collected personal statements, observations and remarks. With equal priority, these studies would be part of the same survey and therefore data would be collected concurrently.

## 4.5 Participants

Participant demographic information was collected on sex, age, rank, living arrangements and relationship status. Data were collected based on achieving the required sample size, not specifically to achieve representative sampling. However, some subgroups were representative of the population at the time of data collection, such as sex.

### *4.5.1* ***Participant demographic***

Sample characteristics are listed in Table 4, presented in groups, detailing the number within each group together with its percentage of the total sum, alongside British Army figures taken from the same data collection period, October 2019.

Table 4: Sample characteristics

| | | Participants | | Total Army | | *Army reporting range* |
|---|---|---|---|---|---|---|
| Index | | n | (%) | n | (%) | |
| ***Sex n (%)*** | Male | 362 | (89.6) | 71,660 | (90.3) | *Male* |
| | Female | 42 | (10.4) | 7,660 | (9.7) | *Female* |
| ***Age n (%)*** | 18-25 | 43 | (10.6) | 19,280 | (24.3) | *18-24* |
| | 26-30 | 73 | (18.1) | 17,470 | (22.0) | *25-29* |
| | 31-40 | 176 | (43.6) | 27,820 | (35.1) | *30-39* |
| | 41-50 | 95 | (23.5) | 10,700 | (13.4) | *40-49* |
| | 51+ | 17 | (4.2) | 1,830 | (2.3) | *50+* |
| ***Rank n (%)*** | Other Rank (OR) | 50 | (12.6) | 61,280 | (77.2) | *OR* |
| | Non-Commissioned Officer (NCO) | 168 | (42.3) | 4,950 | (6.3) | *NCO* |
| | Commissioned Officer (OFFR) | 179 | (45.1) | 13,100 | (16.5) | *OFFR* |
| ***Living Arrangements n (%)*** | I live alone** | 50 | (12.4) | | | |
| | I live in shared accommodation** | 38 | (9.4) | | | |
| | I am weekly commuting** | 76 | (18.8) | | | |
| | I live with my partner in the UK** | 177 | (43.8) | | | *Not available* |
| | I live with my partner overseas** | 48 | (11.9) | | | |
| | I am currently on tour / exercise** | 5 | (1.2) | | | |
| | Other** | 10 | (2.5) | | | |
| **Length of service n (%)** | <1 year | 3 | (0.7) | 680 | (1.0) | *<1* |
| | 1-5 years | 51 | (12.6) | 21,148 | (30.0) | *1-5* |
| | 6-10 years | 73 | (18.1) | 16,491 | (23.0) | *6-10* |
| | 11-19 years | 164 | (40.1) | 21,808 | (31.0) | *11-19* |
| | >20 years | 113 | (28.0) | 10,103 | (14.0) | *>20* |
| ***Relationship Status n (%)*** | Single** | 45 | (11.1) | | | |
| | In a relationship < 1 year** | 22 | (5.4) | 32,901 | (47.0) | *Other* |
| | In a relationship > 1 year** | 79 | (19.6) | | | |
| | Married / civil partnership | 244 | (60.4) | 32,957 | (47.0) | *Married /CP* |
| | Separated | 8 | (2) | 47,372 | (6.0) | *Separated* |
| | Divorced** | 6 | (1.5) | | | *Other* |

Information collected from biannual diversity statistics OCT19 and freedom of information request.
Figures from the Army include soldiers in training which have been excluded from this study.

* Other includes living with parents, full posting separation
** Data not currently collected by the British Army in this format

There were a number of participants who had not immediately provided their rank. For those who had selected 'other', their details were manually changed to categorise their results into either 'Other Rank' (OR), 'Non-Commission Officer' (NCO) or Commissioned Officer (OFFR) depending on the rank details they provided. One participant registering as a signaller was re-categorised from an NCO to OR. This left no further gaps or errors in data for rank.

### 4.5.2 ***Rank grouping***

For the purpose of this study, rank was grouped into 4 categories, as explained in Figure **5**.

Figure 5: Rank categorisation for this study

| **British Army Ranks** | | | |
|---|---|---|---|
| *Commissioned Officer (OFFR)* | *Warrant Officer (WO)* | *Non-Commissioned Officer (NCO)*<br>Senior Non-Commissioned | *Other Ranks (OR)*<br>Junior Non-Commissioned |
| Second Lieutenant<br>Captain<br>Major<br>Lieutenant Colonel<br>Colonel<br>Brigadier<br>Major-General<br>Lieutenant-General<br>General | Warrant Officer Class 2<br>Warrant Officer Class 1 | Sergeant<br>Staff/Colour Sergeant | Private<br>Lance Corporal<br>Corporal |

In relation to living arrangements, 10 participants failed to define themselves in a category. Those with partners who defined themselves or their partners as weekly commuting were grouped with the 'I am weekly commuting' data. Those participants who were away from their partners through elective unaccompanied posting or prolonged separation were categorised as 'I am on exercise or on tour'. A group of 4 'others' represented those soldiers who were

in period of transition that were left in their own category. These included living with parents or currently separating from their partners.

> *'I have entered a new relationship and co-habit with her but have yet to complete divorce proceedings with my wife from whom I am separated'*
>
> 'Living with parents'

This completed the data cleanse and provided a clear set of participant data from which to start the formal data analysis.

### 4.5.3 ***British Army full-time strength***

For analysis purposes, the full-time strength of British Army soldiers were considered to be 73,472 (Ministry of Defence, 2019b). This figure is taken from the third quarter of 2019 and includes full-time trade trained strength (FTTTS).

FTTTS excludes those recruits in phase one training and soldiers in trade training, also known as phase two. When reviewing the results, any reference to full-time Army strength or scaled percentages will use British Army strength figures of 73,740 as a baseline.

### 4.5.4 ***Sampling procedures***

As the population was large and dispersed, a simple random sampling strategy was employed selecting clusters of soldiers at random (Vogt et al., 2012). A mix of regular Battalions, Corps and Units and an overseas training unit (not basic training personnel which were excluded) offered accessibility to a range of different ages, rank, sex and living arrangements.

Schatzman and Strauss (1973, p. 39) described selective sampling as "shaped by the time the researcher has available to him, by his framework, by his starting and developing interests, and by any restrictions placed upon his observations by his hosts". In this study, there was only one self-funded researcher and therefore limitations on time meant that the dissemination of the questionnaire would have to be done via Army personnel. It was not possible to approach

soldiers individually. The framework supported an online questionnaire suitable for sensitive research that could be easily accessed and clearly interpreted by personnel (Vogt et al., 2012). The research interests focused on ensuring that any resulting data would be suitably robust and diverse enough for statistical inference to support claims on any findings (ie: having large enough sample sizes for certain demographics such as living alone). Finally, the restrictions on this study from an Army perspective sat solely with which selected senior personnel would be willing to share the survey with their staff and which staff would be willing to voluntarily give up their time to complete it. Participants were recruited from several groups across the British Army: a UK-based Battalion, soldiers currently separated from home and overseas training establishments. Limitations of this approach are discussed further (refer to chapter 4.7.7)

For this study, data collection relied on self-reporting methods, a proven method for collecting information on soldier relationships (Karney & Crown, 2007). Recruitment for the survey was achieved through the Brigade Commanders or Commanding Officers. A direct approach was made via email outlining the research objectives, ethics approval and participant information. On agreement, a second MODREC approved email was sent to their Welfare Officer or Deputy Chief of Staff (DCOS) to be disseminated to soldiers in their Units (refer to Appendix 1).

The participant information was available as supporting documentary to be transparent regarding study content, expectation and further support. Commanders were made aware that this was a voluntary, anonymous study and independent of the chain-of-command. No financial incentive was provided for participation.

### 4.5.5 ***Sample size and power***

A sample size is generally based on the number of subjects in relation to the number of predictor parameters for potential inclusion (Riley et al., 2019; Tabachnick & Fidell, 2013). Power is described as the probability of finding no difference in statistical analysis, when there actually could be difference (Type II error). “Therefore, the power of a study reflects the probability of detecting a

difference when this difference exists" (Biau et al., 2008, p. 2283). An accurate sample size is critical to ensuring that researchers can be confident in the significance of their results (Patel et al., 2003).

In this study, sample size was calculated by comparing the rule of thumb approach and widely recognised power calculations. Tabachnick and Fidell (2013) suggest a ratio of 50 participants for every predictor variable – 1:50. Using the 6 hypotheses this research aimed to test, that estimated a target population of 300. This aligns with suggestions from Wilson Van Voorhis and Morgan (2007) who state that less than 5 participants is insufficient for any relationship measure and 300 is reasonable for more complicated factor analysis.

The rule of thumb model was compared against the results of a power calculators to predict the required sample size. I used https://www.qualtrics.com/blog/calculating-sample-size/ with a confidence level of 95% and a margin of error of 0.5 based on an overall population of 75,000. This method produced a target sample of 384. This calculation was offered as a good multiple regression sample size based on the sample population and therefore adopted as the target sample population for this study.

### 4.5.6 ***Inclusion / exclusion criteria***

Soldiers were included if they were over 18 and a full-time serving member of the British Army. Participants who were under 18 or in training was not included. Training is considered to have unique stressors and therefore soldiers currently in training were excluded from participating in this study. Individuals who are part of Full Time Reserve Service (FTRS) were also excluded.

### 4.5.7 ***Response rates***

The initial 1400 soldiers were approached in groups. The Army Scientific Assessment Committee (ASAC) reported usual response rates of 30% using service personnel, thus 1400 personnel should have provided sufficient responses to meet or exceed a target sample size of 384 (refer to Chapter 4.5.5.). However, initial participant response rate measured 10%. Whilst this was less than anticipated, it was in line with average response rates for external

surveys (Fryrear, 2015). Feedback from the Welfare teams suggested there was ‘survey fatigue’ or ‘surveyitis’ amongst Army personnel, which could have contributed to the lower response rates. Therefore, in early 2019, the study population was extended further to include up to 2,000 possible respondents in order to meet the sample requirements. This was achieved by approaching more Commanding Officers and Welfare staff. Due to the recruitment process, the total number of soldiers who viewed the advertisement is not known, therefore it is not possible to accurately report final response rates.

During an 8-month period, between October 2018 and June 2019, 408 participants answered the survey. 4 were deemed spoiled due to incomplete responses, non-compliance in the recruitment sample or general hijinks in the comments section and were removed from the findings. The final 404 participants were accepted and used for this study. Based on the required study population of 384, the research achieved 105% against target.

## 4.6 Measures

Given that validated quantitative instruments for the four main research variables were readily available for this type of research, a new survey design was ruled out as unnecessary.

### *4.6.1* ***Rationale for choice of measure***

There are hundreds of published scales relating to stress and coping with a recent surge in measures rating sexuality, function and disorder. For this research, many were discounted due to their size, relatability to the research question and their theoretical slant. Table 5 offers an example of the measures discounted.

Table 5: *Discounted measures examples*

| *Rationale for discounting the measure* | *Examples* |
|---|---|
| Not a good theoretical fit | *Stimulus-based perspective*<br>Social Readjustment Rating Scale<br>The Impact of Event Scale (IES)<br>Change in Sexual Functioning Survey (CSFQ)<br>*The biological model*<br>Arizona Sexual Experience Scale (ASEX)<br>*The behavioural model*<br>Compulsive Pornography Consumption (CPC) Scale<br>Garos Sexual Behavior Index |
| Low / no reliability scores | The ISMA stress test<br>Single Item Measure of Sexual Satisfaction |
| High question numbers | Stress Overload Scale<br>Stress Coping Resources Inventory<br>Sexual Functioning Survey (SFQ)<br>Quality of Sexual Life Survey (QVS)<br>Cyber-Pornography Use Inventory (CPUI)<br>Sexual Addiction Screening Test (SAST)<br>Compulsive Sexual Behavior Inventory |
| Sex specific / weighted | Female Sexual Function Index (FSFI)<br>Brief Index of Sexual Functioning for Women<br>International Index of Erectile Dysfunction (IIEF) |
| Not directly relevant to the RQ | Sex Knowledge and Attitude Survey (SKAQ)<br>Multidimensional Scale of Sexuality (MSS)<br>Psychological and Interpersonal Relationship Scales (PAIRS)<br>Couple Satisfaction Index (CSI) |

The research found four surveys that closely matched the study requirements that could also offer published norms in order to provide robust comparisons. The survey was therefore, constructed by combining existing survey measures for the 4 research variables.

1. Stress variable: **Perceived Stress Scale (PSS)** (Sheldon Cohen & Janicki-Deverts, 2012).
2. Sexual functioning variable: **National Surveys of Sexual Attitudes and lifestyles – Sexual Functioning (NASTAL-SF)** (Mitchell et al., 2013)
3. Compulsive sexual behaviour variable: **Sexual Compulsivity Scale (SCS)** (Kalichman & Rompa, 2001)
4. Online sexual activity variable: **Internet Sex Screening Test (ISST)** (Delmonico & Miller, 2003)

Criteria for inclusion centred on a strong theoretical fit using measures that were recognised, reliable with the ability to provide scaled data for correlation analysis. Soldier time constraint was also a factor, recognising that participants may not have time to, or a wish to respond to a large number of questions.

### 4.6.2 ***Perceived Stress Scale (PSS)***

Used to assess non-specific appraised stress, the PSS offers a self-reporting participant view of how often subjects have found their lives unpredictable, uncontrollable, and overloaded in the last month. Author Professor Sheldon Cohen (Carnegie Mellon University) confirmed his support for this research and clarified that there were no published research data for the Perceived Stress Scale (PSS) in the United Kingdom at that time. However, Cohen has produced large-scale studies in the United States offering norm tables from a Harris poll providing unadjusted statistics for 2000 participants compared over three studies: 1983, 2006 & 2009. (Sheldon et al., 2012).

This 5-point Likert scale psychological assessment offers a broad measure of an individual's perception of how stressed they have felt in the last month. The questions were to understand and offer a view of how they perceive their current attitude to stress, as opposed to trying to determine causal factors.

Figure 6: PSS measure

| |
|---|
| 1. In the last month, how often have you been upset because of something that happened unexpectedly? |
| 2. In the last month, how often have you felt that you were unable to control the important things in your life? |
| 3. In the last month, how often have you felt nervous and "stressed"? |
| 4. In the last month, how often have you felt confident about your ability to handle your personal problems? |
| 5. In the last month, how often have you felt that things were going your way? |
| 6. In the last month, how often have you found that you could not cope with all the things that you had to do? |
| 7. In the last month, how often have you been able to control irritations in your life? |
| 8. In the last month, how often have you felt that you were on top of things? |
| 9. In the last month, how often have you been angered because of things that were outside of your control? |
| 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? |

* From Cohen (1994)

### 4.6.3 ***PSS psychometric properties***

Psychometric properties of PSS have been independently investigated using confirmatory factor analysis (construct validity), Cronbach's reliability results provided satisfactory alpha values 0.82 for PSS-10. PSS score also exhibited high correlation coefficients (Andreou et al., 2011).

### 4.6.4 ***PSS scoring parameters***

PSS scores were obtained by reversing responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1 & 4 = 0) to the four positively stated items and then summing across all scale items. Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress.

- Scores ranging from 0-13 are considered low stress.
- Scores ranging from 14-26 are considered moderate stress.
- Scores ranging from 27-40 are considered high perceived stress.

Scores were totalled across each of the 10 questions with a final PSS score for each participant. Final results ranged from 0-40.

### 4.6.5 ***NASTAL-Sexual Functioning (NATSAL-SF)***

The National Survey of Sexual Attitudes and Lifestyles (NATSAL) – Sexual Functioning (NATSAL-SF) is a psychometrically validated measure of sexual function for use in community health surveys. It provides an estimate of the level of sexual function across the previous 12 months. Questions had been cognitively tested for comprehension and psychometrically validated measures had been developed. (Burkill et al., 2016; Jones et al., 2015; Macdowall et al., 2006; Mitchell et al., 2013; Mitchell et al., 2012). Permission was granted for the use of the NATSAL-SF instrument within this study, allowing for scoring and comparison against the existing NATSAL data.

Figure 7: NATSAL-SF measure

Component one: problems with sexual response (participants were asked to report which, if any, of the following sexual difficulties they had had for a period of 3 months or more in the past year)

- Lacked interest in having sex
- Lacked enjoyment in sex
- Felt anxious during sex
- Felt physical pain as a result of sex
- Felt no excitement or arousal during sex
- Did not reach a climax (experience an orgasm) or took a long time to reach a climax despite feeling excited or aroused
- Reached climax (experienced an orgasm) more quickly than you would like
- Had an uncomfortably dry vagina (asked of women only)
- Had trouble getting or keeping an erection (asked of men only)

Component two: sexual function in relationship context (participants were asked to think about their sexual relationship in the past year)

- My partner and I share about the same level of interest in having sex (response options: agree strongly, agree, neither agree nor disagree, disagree, disagree strongly)
- My partner and I share the same sexual likes and dislikes (response options: agree strongly, agree, neither agree nor disagree, disagree, disagree strongly)
- My partner has had sexual difficulties in the past year (response options: agree strongly, agree, neither agree nor disagree, disagree, disagree strongly)
- How often would you say you feel emotionally close to your partner when you have sex together? (options: always, most of the time, sometimes, not very often, hardly ever)

Component three: appraisal of sex life (participants were asked to think about their sex life in the past year)

- I feel satisfied with my sex life (response options: agree strongly, agree, neither agree nor disagree, disagree, disagree strongly)
- I feel distressed or worried about my sex life. (response options: agree strongly, agree, neither agree nor disagree, disagree, disagree strongly)
- I have avoided sex because of sexual difficulties, either my own or those of my partner (response options: agree strongly, agree, neither agree nor disagree, disagree, disagree strongly)
- Have you sought help or advice regarding your sex life from any of the following sources in the last year? (participants selected all that applied from a list of ten sources; four informal sources [including family member or friend, information and support sites on internet] and six professional sources [including GP or family doctor, sexual health clinic, genitourinary clinic, sexually transmitted infection clinic, or relationship counsellor])

* From Mitchell et al. (2013)

#### *4.6.5.1* ***NATSAL-SF psychometric properties***

The NATSAL-SF survey had been reviewed for reliability and validity across a number of external reviews. “Confirmatory factor analysis established that a 'general-specific model' had the best fit and was equivalent between general population and clinical samples (Comparative Fit Index = 0.963 Tucker Lewis Index = 0.951; Root Mean Square Error of Approximation = 0.064). The 17-item Natsal-SF is positively associated with the Female Sexual Function Index-6 (B = 0.572) and Brief Sexual Function Survey for men (B = 0.705); it can discriminate between clinical and general population groups (OR = 2.667); and it has good test-retest reliability (r = 0.72)” (Mitchell et al., 2012, p. 409).

#### *4.6.5.2* ***NATSAL-SF scoring parameters***

The NATSAL-SF elements of the survey were analysed using the simplified ‘Method 2’ scoring system. This was proven to have high correlations to the original weighted scoring system (Jones et al., 2015). Using a combination of general scoring, Likert and weighted calculations, each participant has the potential to score up to 38 points. Higher scores are related to poorer sexual functioning. Based on NATSAL-SF parameters, scores of >13.4 were considered to be representative of a problem in either sexual functioning or sexual relationships. This was based on the bottom quintile of sexual functioning scores (Mitchell et al., 2013)

### *4.6.6* ***Sexual Compulsivity Scale (SCS)***

The Sexual Compulsivity Scale (SCS) had previously been used to ascertain sensation seeking behaviour that might place an individual at greater risk of sexually transmitted infections (STI’s) or exposure to HIV. Developed by Professor Seth Kalichman (University of Connecticut), this measure had a published validated scoring system and was approved for use in this study.

The SCS measure is ubiquitous within research on sexually transmitted diseases or in its use to predict outcomes of sexual behaviour. As a validated scaled measure, it also has application within more general studies to assess emotional withdrawal from intradyadic relationships. For this study, it was used

explore reward-seeking behaviour and its relationship to online sexual activity. The SCS is a 4-point Likert 10 question self-assessment scale.

Figure 8: SCS measure

| Subscale and items |
|---|
| Interference of sexual behavior |
| 1. My sexual appetite has gotten in the way of my relationships. |
| 2. My sexual thoughts and behaviors are causing problems in my life. |
| 3. My desires to have sex have disrupted my daily life. |
| 4. I sometimes fail to meet my commitments and responsibilities because of my sexual behaviors. |
| 10. It has been difficult for me to find sex partners who desire having sex as much as I want to. |
| Failure to control sexual impulses |
| 5. I sometimes get so horny I could lose control. |
| 6. I find myself thinking about sex while at work. |
| 7. I feel that my sexual thoughts and feeling are stronger than I am. |
| 8. I have to struggle to control my sexual thoughts and behavior. |
| 9. I think about sex more than I would like to. |

* From (Ballester-Arnal, Gómez-Martínez, Llario, & Salmerón-Sánchez, 2013)

#### *4.6.6.1* ***SCS psychometric properties***

This instrument had shown reliability of .88 (Kalichman & Cain, 2004). The analyses reported an alpha coefficient of .89 and temporal stability, test-retest coefficient of .95. Due to evidence of construct and criterion-related validity and its convenient number of only ten questions, the SCS is undoubtedly one of the most widely used measures for sexual compulsivity (Hook et al., 2010).

#### *4.6.6.2* ***SCS scoring parameters***

The source for measuring sexually compulsive behaviours was the Sexual Compulsive Scale (SCS). Participants responded to 10 items on a Likert-type scale from 1 (not at all like me) to 4 (very much like me). Responses to the ten items were summed to get an overall score ranging from 10 to 40. A cut off score of ≥ 24 was used to indicate potential problems with sexual compulsivity (Fisher et al., 2010).

### 4.6.7 ***Internet Sex Screening Test (ISST)***

The Internet Sex Screening Test (ISST), developed by Professor David Delmonico (Duquesne University), had been used as a self-administered, screening instrument to help individuals ascertain if their online sexual activity had become 'clinically problematic'. This would provide data on soldiers' sexual activity online creating a picture of current usage.

The Internet Sex Screening Test is a 25 true-false item test proven to measure constructs of online sexual behaviour (Delmonico & Miller, 2003). Permission was given to use this instrument for this study. The ISST is a 25 true-false item test proven to measure true constructs of online sexual behaviour (Delmonico & Miller, 2003). Divided into 7 factors, they measure problematic online sexual activity (Eleuteri et al., 2014). This measure also includes two single item scales for accessing the internet away from home for sexual pursuits and accessing illegal sexual material online.

Figure 9: ISST measure

*Online Sexual Compulsivity*
Internet sex has sometimes interfered with certain aspects of my life.
I have made promises to myself to stop using the Internet for sexual purposes.
I sometimes use cybersex as a reward for accomplishing something (e.g., finish a project, stressful day, etc.)
When I am unable to access sexual information online, I feel anxious, angry, or disappointed.
I have punished myself when I use the Internet for sexual purposes (e.g., time-out from computer, cancel Internet subscription, etc.)
I believe I am an Internet sex addict.

*Online Sexual Behaviour - Social*
I have participated in sexually related chats.
I have a sexualized username or nickname that I use on the Internet.
I have increased the risks I take online (give out name and phone number, meet people offline, etc.)
I have met face to face with someone I met online for romantic purposes.
I use sexual humour and innuendo with others while online.

*Online Sexual Behaviour - Isolated*
I have searched for sexual material through an Internet search tool.
I have masturbated while on the Internet.
I have tried to hide what is on my computer or monitor so others cannot see it.
I have stayed up after midnight to access sexual material online.

*Online Sexual Spending*
I have joined sexual sites to gain access to online sexual material.
I have purchased sexual products online.
I have spent more money for online sexual material than I planned.

*Interest in Online Sexual Behaviour*
I have some sexual sites bookmarked.
I spend more than 5 hours per week using my computer for sexual pursuits.

* From Delmonico and Miller (2003)

#### *4.6.7.1* ***ISST psychometric properties***

In analysis by Delmonico and Miller (2003) psychometric properties of the ISST were explored. “The first factor, Online Sexual Compulsivity, a measure of online sexual problems, had six items and Cronbach’s a=0.86. Second, Online Sexual Behaviour-Social (OSB-S), a measure of the tendency to engage in interpersonal interactions with others during online sexual behaviour (e.g., sex-related chat rooms), had five items and a=0.78. Third, Online Sexual Behaviour, Isolated (OSB-I), a measure of the tendency to engage in solitary online sexual behaviour (e.g., viewing pornography), had four items and a=0.73. Fourth, Online Sexual Spending (OSS), a measure of the tendency to purchase sexual material and/or join sex-related groups or websites via the Internet, had three items and a=0.61. The fifth factor was Interest in Online Sexual Behaviour, a measure of the tendency to use the computer for sexual pursuits (e.g., bookmarking sexual sites), had two items and a=0.51. Cronbach alphas for scales four and five are modest, but reasonable for three and two items scales” (Delmonico & Miller, 2003, p. 266).

#### *4.6.7.2* ***ISST scoring parameters***

As a total, the ISST measure calculates risk of problematic internet use for sexual behaviour.

- Scores ranging from 0-8 are considered low risk.
- Scores ranging from 9-18 are considered at-risk.
- Scores from 19+ are considered high-risk

Scores indicate whether online activity is likely to jeopardise crucial areas of your life including person, social and occupational. Scores ≥ 19 are advised to seek professional support.

## 4.7 Procedures

After considering various options for data-collection, the concept of an online anonymous survey was deemed the most appropriate. This was for a number of reasons. Firstly, the cohort size was large, with a sample size that was likely to be in the 100’s. There was an expectation that accumulating that amount of data would be best served using online self-reporting methods. With one

researcher, the time involved in face-to-face interviewing would be unrealistic or potentially detrimental to the study's currency. Furthermore, previous research evidence showed that studies of an intimate or sensitive nature produce better results when participants can respond anonymously (Clark-Carter, 2010; Ong & Weiss, 2000) and may be less likely to be honest if they had to face an interviewer (Braun & Clarke, 2006). The survey also had to be simple to access, easy to navigate with clear instructions on how to complete (Lefever et al., 2007).

### 4.7.1 ***Study design***

The survey consisted of anonymous, short survey that asked for a reflection of current experience of stress, sexual functioning and sexual behaviour through 20 questions. The aim of the quantitative data were to measure evidence of correlation between 4 defined variables: perceived stress; sexual function; online sexual activity; and compulsive sexual behaviours.

Table 6: *Survey design matrix*

| Strategy | Sample | Goal | Analysis |
|---|---|---|---|
| ***Large Scale Survey*** | | | |
| Quantitative questioning using validated instruments | Random sample of 18+ year old soldiers across the British Army through an online anonymous survey | Asses current experience of stress, sexual functioning and online behaviour as a self-reported measure to highlight at-risk groups | Correlation Analysis<br>Logistic Regression<br>One-way ANOVA<br>Eta-squared |
| Qualitative inquiry using open-ended questions | | Contextualise the lived experience of soldiers in steady state environment | Thematic Analysis |

Using the selected 4 measures, the survey asked a number of questions around stress, sexual relationships, risk and online behaviours. All selected measures were replicated in the survey in their original form as published by the authors.

### 4.7.2 ***Survey structure***

When opening the link to start the survey, participants had the choice of whether to enter the survey; once they began, they were free to exit at any time. Information was provided on the purpose of the study, benefit to participants, details on confidentiality and anonymity and where to direct any concerns or complaints. A participant information sheet accompanied the survey which provided further information on where to seek help for relationship concerns for those individuals who dropped out before completing the survey (refer to Appendix 2).

Within the structure of the survey, (refer to Appendix 3), Question 1 aimed to capture participant consent. The main survey could not be accessed without agreement to proceed and confirmation that the participant had read the guidance notes. Questions 2-7 collected demographic data. When considering relationships between demographic variables, data such as age, rank and living arrangements. Participants were asked to confirm that they were currently serving in the British Army. Questions 8-18 included questions from the 4 measures.

Finally, two qualitative questions were open-ended allowing participants to add further information on their own experience of stress or sex, either positive or negative.

*Q.19 Is there anything else you would like to say about how stress impacts on you or your relationship?*

*Q.20 Is there anything else you would like to say about your sex life (good and bad)?*

### 4.7.3 ***Survey platform***

The platform for the survey required functionality that would allow for data exportation into Statistical Package for the Social Sciences (SPSS) version 26.

Furthermore, it had to be able to collect data without compromising participant confidentiality or anonymity and it had to be easy to navigate from both a design and user perspective. JISC Online Surveys, formerly Bristol Online Surveys, is a University endorsed tool that offered the right level of utility and design and was selected as the best platform for the survey.

Given the sensitive nature of the questions and the data, in order to protect the anonymity of the participants, IP addresses were not tracked at any time. The survey platform captured how many times the survey had been accessed but not completed. It also recorded if participants dropped out on a particular page. This allowed for constant review during the data collection period to highlight any potential problems or difficult questions through unusual dropout points.

### 4.7.4 ***Survey reliability***

Helms, Henze, Sass, and Mifsud (2006, p. 632) define reliability as "the extent to which a sample's patterns of responses to items or objects are consistent or repeatable across items (i.e., internal consistency)".

Cronbach's Alpha calculations were conducted in SPSS for the 4 surveys used for this study. For the NASTAL-SF scale, one item was sex specific and therefore the test was run for the individual male and female responses.

The PSS scale consisted of 10 items (α = .86). The NATSAL-SF male, female scales consisted of 16 items (α = .85, α = .85). The SCS consisted of 10 items (α = .89). The ISST scale consisted of 25 items (α = .87). These scores indicated a high level of internal consistency for each scale with this population sample.

### 4.7.5 ***Study pilot***

The survey was sent to 30 volunteer participants prior to full distribution in order to measure the impact on the participants and highlight any potential areas for concern. This data would not be used in the research sample. Trial participants were asked to provide feedback (by email) regarding the personal impact of completing this survey. They were asked:

1. Were you clear about giving your consent to complete the survey?

2. Did you find the survey easy to navigate?
3. Were the questions well-defined and easy to understand?
4. Were you comfortable answering the questions?
5. Would you like to offer any further feedback to improve the process of completing this survey?

The pilot ran from 20th September 2018 for three weeks. It specifically aimed to determine how easy the survey was to navigate, if the survey platform was user-friendly and to check the clarity of the instructions. It also assessed risk to the participant regarding potential to cause distress or upset. Participants were recruited through professional contacts and included a mix of serving personnel, veterans and military clinicians with a mixed age range (20-59), sex, geographical locations and social demographic backgrounds. The survey was emailed to 30 participants which generated 23 returns.

### 4.7.6 ***Pilot results***

Following the points raised by the pilot study, a number of amendments were made, including the correction of some small grammatical and layout issues (refer to Table 7).

Table 7: *Pilot question results*

| Question | | Yes | No |
|---|---|---|---|
| 1 | Were you clear about giving your consent to complete the survey? | 23 | 0 |
| 2 | Did you find the survey easy to navigate? | 23 | 0 |
| 3 | Were the questions well-defined and easy to understand? | 23 | 0 |
| 4 | Were you comfortable answering the questions? | 23 | 0 |
| 5 | Would you like to offer any further feedback to improve the process of completing this survey? | 16 | 7 |

*n=23*

Feedback included:

Table 8: *Pilot feedback*

| Feedback | Review |
|---|---|
| *I didn't like the word gotten* | The measures are reproduced in the original form and words therefore cannot be changed. |
| *You don't include separated as a relationship status* | This was added to the survey |
| *Does not clarify extra-marital affairs when filtering those who have been in a relationship for a year.* | This is from the NATSAL-SF survey and has to be reproduced in the original form and words therefore cannot be changed. |
| *Can you fix the headings when you scroll down* | This is was raised as a concern by 4 participants as they were unsure what each box related to as they scrolled down. The grid was therefore split in two sections to ensure clarity. |
| *If not is included in the question, can you put it in bold* | There is no facility to do this within the survey platform. |
| *I think participants might require assurance that they either can't be identified by you, or traced, if they answer that they do come across illegal material in their internet search* | A reminder has been added to the survey to reassure participants that they are replying anonymously and their IP address cannot be traced. This has been added with a tick box to confirm understanding. |
| *I appear to be able to tick more than one box, I can agree and disagree – don't know if that is intentional?* | This is an unintentional error and the questions have been changed from a grid to a scale ensuring only one box can be ticked. |
| *Yes (Q3) except one question on the being married/ civil partnership for a year. I had to re-read this several times to check what it was stating.* | This question has been simplified to avoid confusion. Data on married status is already asked in Q5. |

Feedback (refer to Table 8) suggested that participants found the language professional and the subject matter sensitively presented. 3 participants commented that it had 'raised an eyebrow' but stated that they were not too uncomfortable or embarrassed to participate. As the pilot caused no distress and little discomfort in this sensitive area, the feedback represented an acceptable level of comfort which allowed for general distribution. Participant withdrawal instructions would be made clear within the survey. This was the final stage in the survey design process and sample and recruitment planning.

### 4.7.7 ***Survey limitations***

The study design had several limitations:

1. Cross-sectional studies are also prone to certain biases (Setia, 2016). For example, this research measures stress and sexual function, but it cannot be sure if sexual difficulties are causing increased stress or whether sexual difficulties are a result of stress. Therefore, this study is only concerned with the correlation between each variable and for which soldiers this correlation is stronger.
2. The qualitative open-ended questions were originally structured to offer soldiers a space to comment on the survey. The volume of rich qualitative data was therefore unexpected and the methodology adapted post data collection.
3. Self-selection bias. Participants would be made aware of the study through their chain of command meaning those soldiers who had more of an interest in the subject matter (either due to current sexual difficulties or contentment in their sex life) may be more likely to take the time to complete the survey.
4. The participant demographics were not wholly representative in some areas and therefore more research is required before generalisability can be confirmed.
5. The recruitment process did not allow for accurate measurement of the response rates.
6. The PSS asked questions of participants during the previous month whereas the NATSAL-SF inquired about experience across the previous 12 months. The other measures, SCS & ISST did not define any timescale.

There is evidence that a person's response to external and internal stressors is not only different to others but can be different within themselves at different points in our lives (Boyd, 2015). Adopting this philosophy, this project has been designed to verify what is happening amongst the Armed Forces community at one given point, with an understanding that stress experience and behavioural response may slide along a spectrum depending on current or evolving

circumstances. It is recognised that participants are likely to have an agenda that is based on their own individual needs at that time, and that could influence how they respond to inquiry. (Alley et al., 2015). For example, a participant may respond differently to questions if they are completing the survey during summer leave, than if they are waiting to deploy on operations. However, as this research is concerned with the relationship between variables, it can be assumed that if a participant has a positive slant on their current experiences on the day that they complete the survey, it may impact all their view on all questions and thus still having the same correlation across the scales.

### 4.7.8 ***Researcher reflections***

When first considering the survey design, I had great plans. Survey design using an online platform was an area that I felt very comfortable with and I couldn't wait to see my exciting ideas come to life online. However, as I was beginning to learn with research at this level, nothing is that straightforward.

My initial survey design consisted of 30 questions that explored in detail how soldiers experience stress (refer to Figure 10). There were lots of questions regarding whether they felt stress was helpful or not (linked to the literature), what contributed to occupation pressure and where they might seek help for stress.

Figure 10: Example of question in initial survey design

| | Never | Rarely | Sometimes | Most of the time | All of the time |
|---|---|---|---|---|---|
| General workload | ☐ | ☐ | ☐ | ☐ | ☐ |
| Regret over decision making | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pressure to promote | ☐ | ☐ | ☐ | ☐ | ☐ |
| Covering gapped posts | ☐ | ☐ | ☐ | ☐ | ☐ |
| Cut backs and budgets at work | ☐ | ☐ | ☐ | ☐ | ☐ |
| Changes to pensions and terms of service | ☐ | ☐ | ☐ | ☐ | ☐ |
| Pay & personal financial problems | ☐ | ☐ | ☐ | ☐ | ☐ |
| Bullying & harassment | ☐ | ☐ | ☐ | ☐ | ☐ |
| Keeping your partner happy | ☐ | ☐ | ☐ | ☐ | ☐ |
| Housing | ☐ | ☐ | ☐ | ☐ | ☐ |
| Separation | ☐ | ☐ | ☐ | ☐ | ☐ |
| Moving | ☐ | ☐ | ☐ | ☐ | ☐ |

During an academic supervision, I proudly produced my initial design, complete with rationale, expectations and limitations. My enthusiasm was met with a very short, '***so what?***'

What do these questions mean, what do they tell you? So, you have 60% of soldiers who feel pressure to promote – ***so what?*** It was at this moment that I realised, head in hands, that I had produced a meaningless survey. Most importantly, it would not be able to answer even one of the research questions!

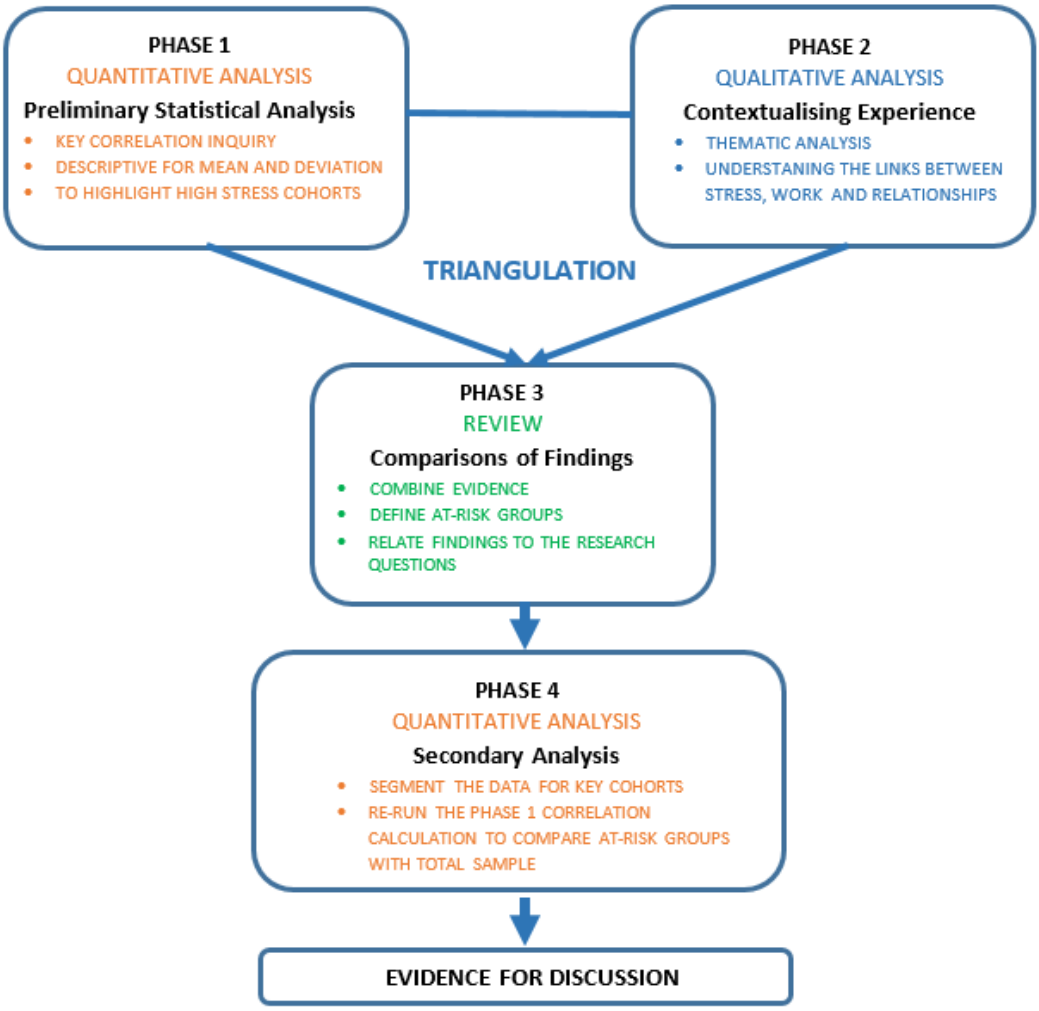
This was a major turning point in my personal learning. I had one chance to approach military personnel, one chance to get the questions right and one chance to produce a PhD based on worthwhile data. This led to the process of exploring published validated instruments capable of producing reliable scaled data which could successfully demonstrate correlations between the four main research areas.

The revised final survey came almost 6 months later, after careful consideration and research. In many ways, this was possibly the most productive and vital part of the planning process, because it shaped a research study that could answer the research question. Albeit a painful first experience, the **'so what?'** question became a regular feature of my personal reflections and a valuable tool in my research journey.

## 4.8 Data analysis

The data analysis was structured as a 4-phase model:

Figure 11: The 4-phase data analysis model




**Phase 1: Preliminary statistical analysis based on the research questions**

The preliminary data analysis focused on answering the main research questions using the full participant sample. Early analysis of the descriptive results aimed to understand the stress experience of soldiers. Data were checked for statistical significance against published civilian norms using a one-sample t-test. Pearson's Product Moment Correlation Coefficient (PPMCC) correlation analysis was used to determine the strength and direction of the relationships between the 4 main variables in the study in relation to the research questions and clinical aims.

**PHASE 2: Using the quantitative findings to understand how and why soldiers experience stress in order to define at-risk groups**

Qualitative data were analysed using Reflexive Thematic Analysis (TA) to gain contextual insights into the participants lived experience of occupational and familial strain. Coding and theme refinement allowed for the generation of clear contributors to increased stress and sexual difficulties, whilst exploring areas where soldiers appeared to be managing their global pressures more successfully. Results were considered within the theoretical frameworks as outlined in Chapter 2.6.

**PHASE 3: The combined review of the quantitative results and qualitative findings**

The review sought to cautiously merge the findings from Phase 1 and 2 to define groups that demonstrated elevated stress, increased risk of physical sexual difficulties and maladaptive behaviours. Identification of key at-risk groups would be used for Phase 4 to review those susceptible to clinical psychological concerns in more detail. This information would be used to support the thesis discussion and study recommendations.

**PHASE 4: Data segmentation and secondary review**

A secondary statistical analysis was conducted for the highlighted at-risk groups identified through the quantitative and qualitative review. The same Phase 1 preliminary data correlation models were re-run with segmented data to investigate the difference in correlation when compared to the full sample results. Pearson's and Spearmans Rho correlation analysis were conducted, dependant on the normality of the distribution in each of the subgroups.

Statistically significant relationships of >r=0.800 were subject to further regression analysis to understand effect size. For all bivariate regression calculations, data were reviewed for linearity and data integrity to ensure

parametric testing was suitable.

The mixed methods framework as described by Fetters et al. (2013) was adopted as an appropriate approach (refer to Table 9). Exploratory sequential and explanatory sequential offered primacy to either the quantitative or qualitative data and so were discounted as an unsuitable method for this study. However, a convergent design allowed for the quantitative and qualitative data to be collected concurrently with analysis conducted within a similar time frame, allowing for equal weighting of both quantitative and qualitative data. Data would then be integrated using the method of merging (refer to chapter 8) which brought both the numerical results of the descriptive analysis and research questions statistical result together with the contextual findings for analysis. As the data would not be wholly transformed (changed) or weaved (conjoined) interpretation and reporting was defined as joint display to bring out new insights. This method allowed for the use of visual displays to see how the circular process of review data linked to offer new interpretation of the findings.

Table 9: *Levels of integration in mixed methods research*

| *Integration level* | *Approaches* | *Selected Approach* |
|---|---|---|
| ***Design*** | Exploratory sequential | ***Convergent*** |
| | Explanatory sequential | |
| | Convergent | |
| ***Methods*** | Connecting | ***Merging*** |
| | Building | |
| | Merging | |
| | Embedding | |
| ***Interpretation and reporting*** | Narrative (weaving, contiguous and staged) | ***Joint display*** |
| | Data transformation | |
| | Joint display | |

* Adapted from Fetters et al. (2013)

The quantitative aspect of this study focused on the relationship between variables, accepting that whilst the feelings of the participant at the point of questioning may be influenced by other factors (different day, different response), they would be answering all questions at the same time, so if their mood influenced one response it would impact them all. Thus, still providing reliable results. A number of qualitative analysis methods were considered as a potentially viable research option for this study. Discourse analysis was discounted due to some participant responses only being a few words in length. According to the methods employed in discourse analysis, the depth of language might inhibit meaningful findings (Wodak, 2009) offering a theme-based analysis as more appropriate. In the same way that the numeric quantitative data seeks rigour and truth, there was a recognition that any qualitative stories that come from the survey should have to stand up to the same high standard of review and interpretation (Clark-Carter, 2010).

Thematic analysis (TA), applied within the framework of CR, was adopted as the most appropriate evaluation tool for the qualitative element of the study. This was justified by the need to attribute meaning to personal experience or human phenomena (Willig, 2013). Further details on how TA was applied in practice can be found in chapters 6.3 and 6.4.

### *4.8.1* ***Using the instruments to answer the research questions***

The survey produced numerical scaled data that could be statistically analysed using the research tool, Statistical Package for the Social Sciences (SPSS) v26.

Each research question related to two instrument comparisons:

1. Is stress (PSS) correlated with sexual difficulties (NATSAL-SF)?
2. Is stress (PSS) correlated with online sexual activity (ISST)
3. Is online sexual activity (ISST) correlated with sexually compulsive behaviour (SCS)?
4. Is online sexual activity (ISST) correlated with loss of desire and sexual satisfaction (NATSAL-SF, subscale)
5. Is online sexual activity (ISST) correlated with feelings of intimate partner closeness (NATSAL-SF, subscale)?

6. Does living alone (demographic data) have a higher correlation to increased online sexual activity (ISST) when compared to other living arrangements?

### 4.8.2 ***PHASE 1: PRELIMINARY QUANTITATIVE ANALYSIS***

Phase 1 of the quantitative analysis focused on the 6 research questions. Results also aimed to answer the overarching research question, investigating whether sexual functioning could be a useful gauge for signalling more complex mental health concerns and damaging sexual behaviours.

### 4.8.3 ***Raw score distribution***

Prior to any analysis, raw score distribution was checked using SPSS to ensure that the data were normally distributed with no outliers that could skew the results, including the subgroups as defined in Phase 4. This information would be critical in decisions on statistical analysis and whether the use of parametric or non-parametric tests were appropriate. Where data were considered normally distributed, parametric tests such as Pearson correlation coefficient would be used to identify strength of relationships between variables. For data sets found not to be normally distributed, non-parametric tests such as Spearman's Rho would be used (Clark-Carter, 2010).

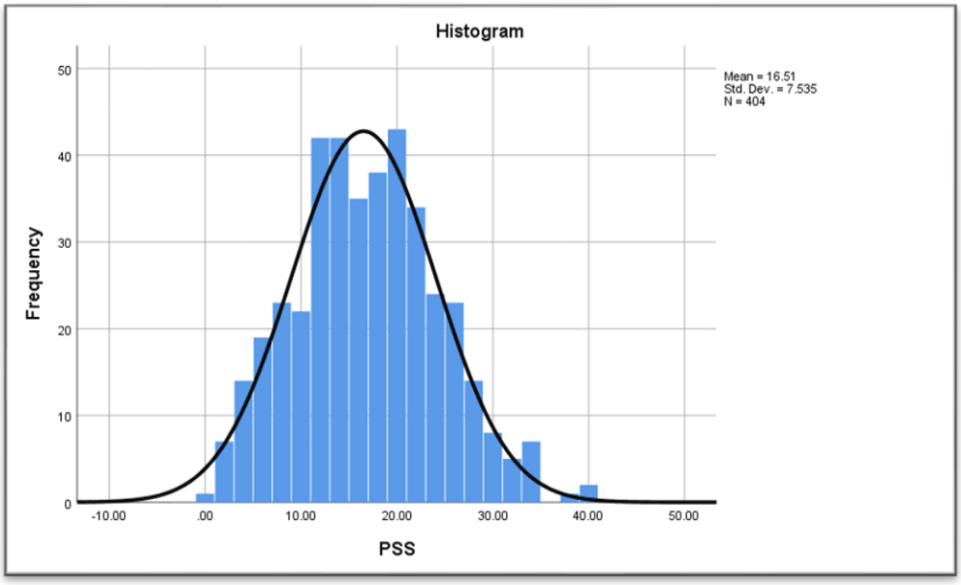
### 4.8.4 ***Phase 4 testing for normal distribution in the segmented at-risk groups***

Diagnostics tests were run to test for normal distribution in the smaller at-risk groups specifically looking at skewness and kurtosis results. Levels of -2 and +2 were considered acceptable in order to prove normal univariate distribution (George & Mallery, 2005). A number of the smaller data sets demonstrated a non-normal distribution. For these correlations, non-parametric Spearman's Rho tests were conducted. This mostly affected correlations using the SCS compulsivity scale.

### 4.8.5 ***PSS British Army 2019 distribution***

The raw scores from the PSS instrument in Figure 12 were normally distributed. There were a number of scores that sat at the higher level. They have remained in the data set and were not considered to be outliers.

Figure 12: PSS raw scores distribution




### 4.8.6 ***NATSAL-SF British Army 2019 distribution***

When comparing raw scores obtained in this study (Figure 13) to the published results from the UK NATSAL national study (Figure 14), the distribution produced a similar pattern. Scores was considered a normal and expected distribution and the data were used in totality for the purpose of correlation and descriptive analysis.

Figure 13: NATSAL-SF raw scores distribution

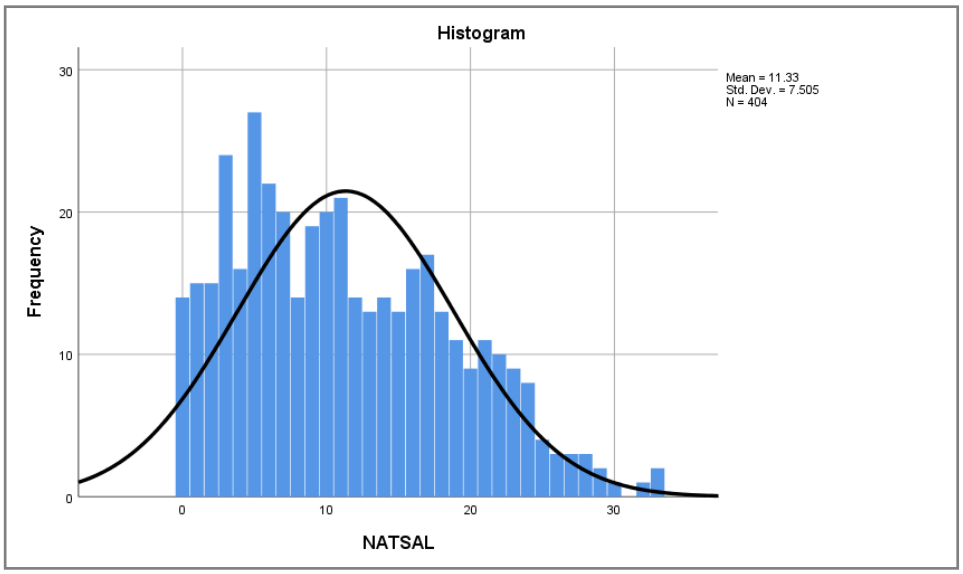
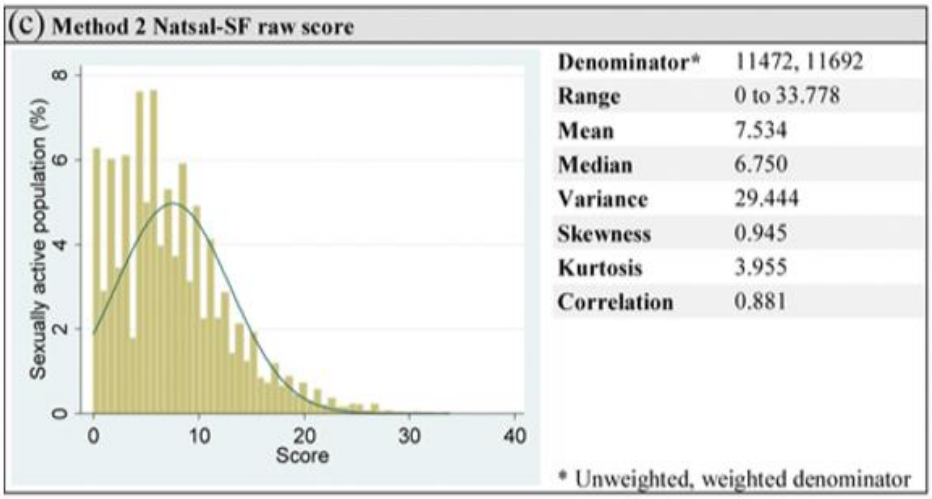



Figure 14: *NATSAL-SF UK study raw scores distribution*



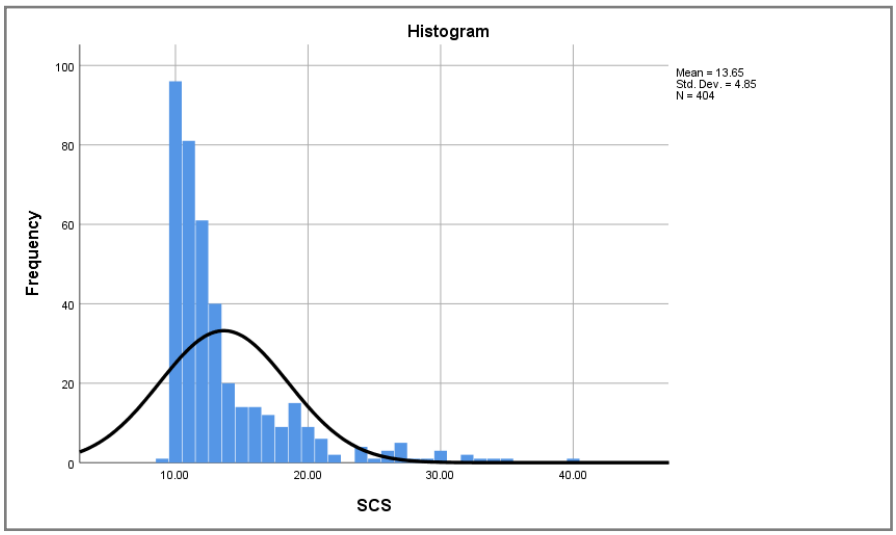

* (K. G. Jones et al., 2015)

### 4.8.7 ***SCS British Army 2019 distribution***

The SCS raw scores (Figure 15) showed a distribution that was negatively skewed. The profile of this data were not unexpected from this measure of sexual compulsivity where fewer personnel would be expected to be at the extreme end of compulsivity. Diagnostics were run using regression analysis, residuals and p-plots to further understand the distribution of error, in order for

data analysis decisions to be made. The normality assumption is primarily of importance for small samples, therefore the non-normality of the errors was addressed by the large sample size (Williams et al., 2013).

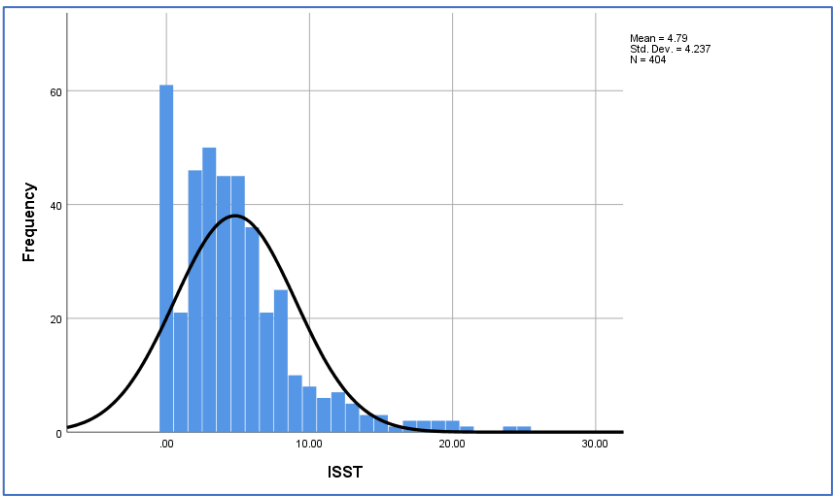
Figure 15: SCS raw scores distribution




### 4.8.8 ***ISST British Army distribution***

The ISST data was negatively skewed; however, this is not unexpected given that the measure is looking at more uncommon types of internet sexual activity, including illegal behaviour. Regression analysis measuring the ISST against the dependent variables demonstrated an acceptable distribution of error.

Figure 16: Raw data ISST distribution



### 4.8.9 ***Descriptive analysis***

Descriptive analysis was used for all four instruments to assess current soldier experience reporting measures of central tendency and variability. Mean calculations and standard deviation were explored for all instruments, segmented by demographics. One-sample t-tests were used to compare against a population mean to test for statistical significance. For this study, the following civilian population means were used.

Table 10: *Population means*

| Measure | Population Mean | Reference |
|---|---|---|
| PSS | 16.54 | Cohen (1994) |
| NATSAL-SF | 7.53 | Jones et al. (2015) |
| SCS | 17.63 | Cooper et al. (2000) |
| ISST | 9.68 | Delmonico and Miller (2003) |

### 4.8.10 ***Subgroup group mean comparisons.***

Based on the main hypothesis that there were certain subgroups who could be more at-risk for increased stress or sexual difficulties, analysis sought to look at difference across means to establish the difference between groups when compared to a defined comparison group mean. This research was only interested in differences between soldiers and not the general public so it was vital in understanding difference within the sample population.

The comparison group were defined as those soldiers who reported low risk for stress and sexual functioning.

Table 11: Comparison *group means*

| | Low risk comparison group | |
|---|---|---|
| Measure | Mean | SD |
| PSS | 8.41 | 3.53 |
| NATSAL | 5.53 | 3.60 |
| SCS | 12.11 | 3.06 |
| ISST | 3.82 | 3.45 |

### 4.8.11 ***Correlation analysis***

For 4 of the 6 research questions, results produced interval data that were suitable for correlation analysis using Pearson correlation coefficient calculations.

- Is stress associated with sexual difficulties?
- Is stress associated with online sexual activity (OSA)?
- Is online sexual activity associated with sexually compulsive behaviour (CSB)?
- Is OSA associated with feelings of intimate partner closeness?

Data were analysed to measure of the strength of the linear relationship between bi-variate correlation. Inclusion was evaluated on the basis of statistical significance at the 5% level as determined by SPSS analysis. Within the study, strength of correlation was described in line with J. Cohen (1988) who suggested for behavioural science that if the value of r varies close to 0.1 it is deemed low, medium if r varies close to 0.3, and large if r varies more than 0.5 (refer to Table 12).

Table 12: *Strength of correlation for r*

| | *Coefficient, r* | |
|---|---|---|
| | Positive | Negative |
| Low | 0.1 to 0.3 | -0.1 -to -0.3 |
| Moderate | 0.3 to 0.5 | -0.3 to -0.5 |
| Strong | 0.5 to 1.0 | -0.5 to -1.0 |

For Phase 1, correlation analysis for these research questions focused on the significance of the relationship. Effect size using regression analysis was considered in more detail for the segmented data in Phase 4.

### 4.8.12 ***Binominal tests***

Binomial tests were used to compare the sample proportion of sexual difficulties to the presumed value based on the percentage results published from the NATSAL-SF 2013 survey (Mitchell et al., 2013).

### 4.8.13 ***Hierarchical multiple regression***

A hierarchical multiple regression tests were run in SPSS to understand the link between correlations when controlled by sex. This information was vital in understanding the impact of male and female stress on the variance of sexual functioning, online sexual activity and compulsive sexual behaviour.

### 4.8.14 ***One-way between groups ANOVA***

A one-way between groups ANOVA were used to analysis nominal data split between several groups against an independent scaled interval variable. This measure was appropriate to address the research questions which did not have two scaled datasets.

- Does living alone have a higher correlation with increased online sexual activity when compared to other living arrangements??

With both measures, there was one dependent variable that was measured on an interval scale and one independent variable that consisted of two or more categorical, independent groups. Results from these tests explained whether the difference between the means of each group are statistically different from each other.

### 4.8.15 ***Post-hoc tests***

For ANOVA tests that demonstrated significance across the data set, post-hoc tests were run to understand where differences existed between the groups. Using Tukey, multiple comparison tables were run in order to demonstrate where significant difference in means occurred.

### 4.8.16 ***Binary logistic regression***

Questions concerned with nominal versus interval data required a different method of analysis in order to understand any statistical implications.

- Is OSA correlated with loss of desire and sexual satisfaction?

Sexual desire and satisfaction were measured using the NATSAL single item measure against the OSA participant data. Loss of desire and sexual satisfaction were answered with a yes/no measures from within the sexual functioning instrument, producing nominal data on sexual experience for analysis. Using binary logistic regression, data were reviewed for correlation and probability. This model was run for both loss of desire and sexual satisfaction.

Binary logistic regression is a form of predictive analysis with a dichotomous dependent variable, coded with a 0,1 (Torosyan, 2017). The purpose of this regression calculation is to find the model, which accurately explained how much desire (dependent variable) is explained by OSA (independent variable) through predictors of group membership.

Studying binary attributes, either the presence or absence of a condition (desire / no desire) logistic regression can be defined in terms of odds. It expects to understand the probability of outcome versus the probability of it not occurring. In simple terms, what is the likelihood that participants would be members of each group based on the predictor variable – how many soldiers are likely to be in the group experiencing loss of desire based on their internet sexual activity.

In order to answer the research question, a binary logistic regression model was run in SPSS using loss of desire (presence of loss of desire) coded as 1 and desire (absence of loss of desire) as 0.

Interpretations included:

- Statistical significance of $p<0.05$
- Classification tables evidenced % correctly classified cases

- Variance in the equation tables identified Exp(B) predicting odds ratios for group membership

### 4.8.17 ***Limitations of binary logistic regression in this study***

With one independent variable it was recognised that a binary logistic regression would be unlikely to perfectly predict group membership, but it could provide an indication of participant behaviour. It would also be able to offer a comparison between OSA and how soldiers experience sexual desire and sexual satisfaction.

### 4.8.18 ***PHASE 2: QUALITATIVE ANALYSIS***

Using a convergent review (refer to Table 9), the qualitative aspect of the research sought to gain insight by exploring depth, richness and context of participant experience using two open-ended questions. In the same way that the numeric quantitative data sought rigour and truth, there was a recognition that any qualitative stories that come from the survey should have to stand up to the same high standard of review and interpretation (Clark-Carter, 2010).

At the point of design and distribution the study had not defined a qualitative hypothesis. It was expected that there would be a link between stress and intimate attachment, but the reality of that lived experience was unknown.

*Q.19 Is there anything else you would like to say about how stress impacts on you or your relationship?*

*Q.20 Is there anything else you would like to say about your sex life (good and bad)?*

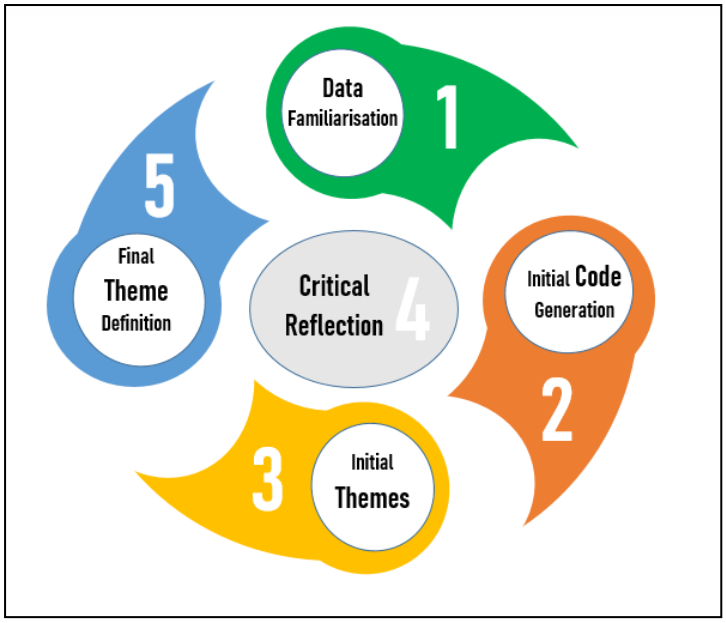
The two questions aimed to give context and meaning to conclusions drawn when comparing the results from both methods. The additional benefit of exploring personal experience in more detail, was the review of self-selecting bias. Such as, checking the number participants struggling with issues, which may have influenced how likely they would be to want to complete the survey.

### 4.8.19 ***Thematic analysis***

A number of qualitative analysis methods were considered as a potentially viable research option for this study. Because Thematic Analysis (TA) as a framework, is not tied to a particular epistemological or theoretical perspective, its application was well suited to this study. Braun & Clarke (2019) suggested that there are different orientations in which this method can be used, including a Critical Realist or essentialist way which focuses on reporting an assumed reality that is evident within the data (refer to Chapter 4.2.1). This critical realist approach was adopted together with a principally deductive approach, ensuring that analysis was closely linked to the main research questions then appraised with a theoretical lens.

Reflexive TA looks at a systemic process of analysing data and is explicit with its techniques. It is a recursive process that in this study covered the 6 processes defined by (Braun & Clarke, 2016).

Figure 17: Study Reflexive Thematic Analysis diagram




The 6th element of report writing is addressed in Chapter 8 as part of the wider discussion. The remaining 5 processes were continually reviewed until saturation and the final themes were robust and reliable.

TA aimed to provide wider context for meaning and interpretation. How exactly does stress in the Army impact on relationships and intimacy? Where are the key relational stressors? And perhaps most importantly, what is different about those soldiers who cope well with their personal pressures? The answers hoped to support discussion and conclusions which could improve mental health support in relation to stress, couple attachment and psychological happiness.

### 4.8.20 ***Theoretical approach to TA***

A Reflexive TA inductive approach was deemed the most suitable as by focusing on defined areas it allowed the 6 research questions to drive the analysis (Braun & Clarke, 2016). The data were considered as a located truth; the questions were not asked in isolation and came at the end of many other questions relating to stress and sex in the participants lives. Based on previous literature looking specifically at relationship health and stress in the military, there was an expectation to find themes surrounding the stress of military life, that relationships struggled with separation and frustration with Command. None of these themes were new.

The analysis sought to understand the latent nuances between these words to really understand what mattered to the individual, where the pressures were, and what significance they carried for individuals.

The review was conducted using the following guidelines:

- All responses were given equal weight
- Responses were reviewed line by line
- Review will continue until empirically confident that saturation has been achieved
- Responses with a flippant or humorous edge were considered to be authentic and were therefore included

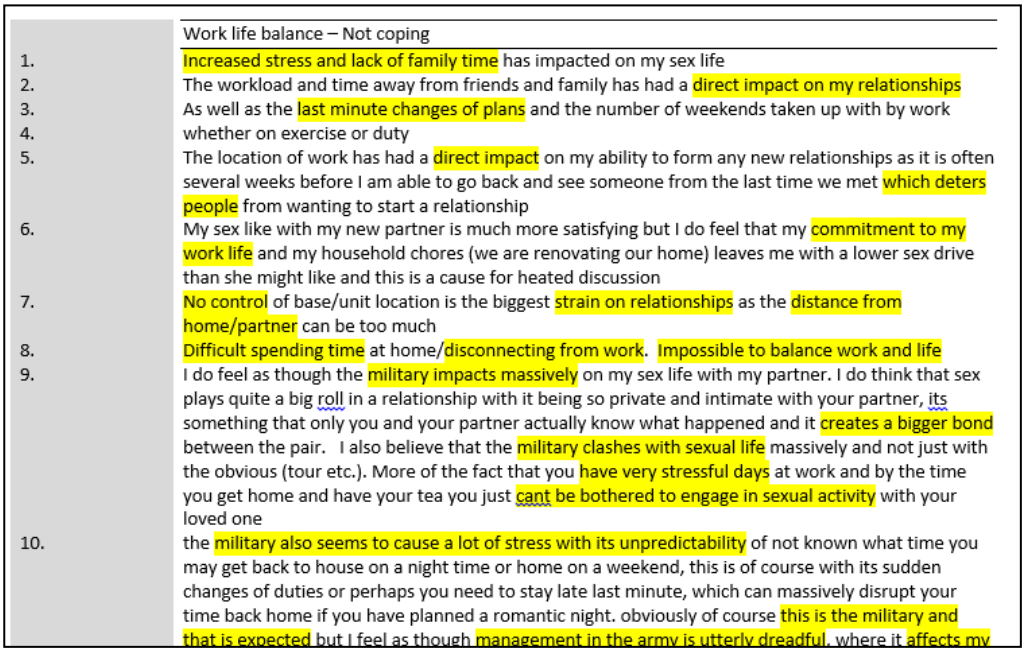
An inductive approach was used to perform high-level initial coding in order to understand what was being said at an individual level and to look for any out-of-the-ordinary or unexpected responses.

### 4.8.21 ***Data familiarisation***

The initial mind-map coding was beneficial in terms of understanding language and looking for patterns. However, it was initially focussed on what was said in the words. It did not incorporate the implicit meaning, nor did it take into account evidence from the literature or the knowledge learned from the quantitative results.

The complete dataset from the qualitative findings were therefore organized into sections, totalling the number of relevant remarks for each code. Where appropriate, some of the more comprehensive comments were added to more than one category. This led to the next part of the process, which was to systematically work through the data to identify key commentaries from which to distil recurrent themes (refer to Figure 18).

Figure 18: Initial code generation



| | Work life balance – Not coping |
|---|---|
| 1. | Increased stress and lack of family time has impacted on my sex life |
| 2. | The workload and time away from friends and family has had a direct impact on my relationships |
| 3. | As well as the last minute changes of plans and the number of weekends taken up with by work |
| 4. | whether on exercise or duty |
| 5. | The location of work has had a direct impact on my ability to form any new relationships as it is often several weeks before I am able to go back and see someone from the last time we met which deters people from wanting to start a relationship |
| 6. | My sex like with my new partner is much more satisfying but I do feel that my commitment to my work life and my household chores (we are renovating our home) leaves me with a lower sex drive than she might like and this is a cause for heated discussion |
| 7. | No control of base/unit location is the biggest strain on relationships as the distance from home/partner can be too much |
| 8. | Difficult spending time at home/disconnecting from work. Impossible to balance work and life |
| 9. | I do feel as though the military impacts massively on my sex life with my partner. I do think that sex plays quite a big roll in a relationship with it being so private and intimate with your partner, its something that only you and your partner actually know what happened and it creates a bigger bond between the pair. I also believe that the military clashes with sexual life massively and not just with the obvious (tour etc.). More of the fact that you have very stressful days at work and by the time you get home and have your tea you just cant be bothered to engage in sexual activity with your loved one |
| 10. | the military also seems to cause a lot of stress with its unpredictability of not known what time you may get back to house on a night time or home on a weekend, this is of course with its sudden changes of duties or perhaps you need to stay late last minute, which can massively disrupt your time back home if you have planned a romantic night. obviously of course this is the military and that is expected but I feel as though management in the army is utterly dreadful, where it affects my |

Any themes which overlapped, such as physical symptomology and fatigue, were combined. The data also included comments regarding general couple issues that were unrelated to the military and were envisaged to also be experienced by civilian couples. This included societal pressures, life-stage considerations or self-confidence.

### 4.8.22 ***Final theme definition***

Theme definition was generated by reviewing the cross-over between subordinate categories and considering which elements could be the most helpful in terms of therapeutic intervention and psychoeducation. In order for this study to inform the field of stress and relationships and outcome improvement, there was a clear focus on finding well evidenced core themes that could accurately reflect soldier sentiment and opinion.

### 4.8.23 ***PHASE 3: Mixing data***

The point of interface was purposefully scheduled when Phase 1 and Phase 2 were fully completed. Whilst sequentially the quantitative results were completed first, followed by the qualitative review, both phases were given equal standing and priority when the data were bought together. This process involved using triangulation as a recognised approach to answer the research questions using converged methods of data analysis in order to answer the research questions (Heale & Forbes, 2013) combining key themes and trends within the findings to highlight crossover in the statistical results (Fetters et al.2013). Using a collaboration and convergent approach, data from both sets were viewed to see if they produced similar results or whether their outcomes contradicted each other.

There was recognition of the complexities of integrating two different methods of collected data and therefore a merging convergent approach was adopted (Hesse-Biber, 2015b) allowing for the influence of wider contextual factors when triangulating the data, such as consideration of cultural milieu, researcher reflexivity and evidence from the literature.

The Phase 3 review aimed to evaluate the evidence against the research question, what the statistical analysis reported, alongside understanding how soldiers experience stress and why there was a difference in resilience between participants. Outcomes sought to produce clear at-risk groups for further analysis in order to understand if there was a measurable difference between discrete groups versus the main sample study.

### 4.8.24 ***PHASE 4: SECONDARY QUANTITATIVE ANALYSIS***

Phase 4 of the data analysis specifically looked at the at-risk groups identified within Phase 3 to compare these groups against the total sample population. Each of the categories were segmented within the data to produce new datasets for investigation. Statistical calculations from Phase 1 were run against the main research questions to understand correlations between the main four variables. The rationale for this decision was to investigate whether the defined at-risk groups produced the same or different statistical results.

Correlation analysis using Pearson correlation coefficient calculations were re-run for the segmented data to answer:

- Is stress associated with sexual difficulties?
- Is stress associated with online sexual activity (OSA)?
- Is online sexual activity associated with sexually compulsive behaviour (CSB)?
- Is OSA associated with feelings of intimate partner closeness?

Results from Phase 4 would be compared to Phase 1 to establish whether the at-risk groups had a more significant relationship between elevated stress and a decline in their sexual functioning and behaviour. This served as a useful gauge as to whether the process of mixing quantitative and qualitative findings had correctly identified those more at-risk.

### 4.8.25 ***Researcher reflections***

Data analysis was the one element of this study that I woke up thinking about. I often dreamed of ANOVA tests, Eta-squared and Pearsons correlations with confusion. I recognised that I was not going to complete this study as an expert statistican, but I also acknowledged that without fully understanding my research decisions, why I had chosen to analyse the data in this way, I would never be able to sucessfully defend my work or be confident in its findings.

My lightbulb moment came when I started to understand the concept of replication. I connected with the principle of assurance, that in order for the study to be reliable, it had to accurately produce data that would be comparible

if it was run again. This changed the way that I viewed the data analysis, I had to make it more transparent and be sure of the significance of its findings. This crossed over to the integration of the mixed methods approach and my understanding of how they might fit together. If I was able to be transparent and offer a justifiable framework for the analysis, it could then be replicated and useful for further research.

Whilst there is much more to statistical analysis that I need to understand, I have appreciated the process of learning. It has helped support my understanding of other journal articles and publications and engineered a continuation of the ‘so what’ reflexive practice in my research.

# 5 Ethics

*'Crying at the luggage carousel'*

## 5.1 Introduction

When this study was in the early stages of design, the ethics process was considered to be just one phase of a much larger project. It was a long and testing process, both in terms of the sheer amount of time and focus it consumed, but also emotionally as the frustration of repeatedly receiving ethics rejections restricted the start of what felt like the 'real work'.

In reality, it became the backbone of this PhD. Without it, this study may have been an unfortunate waste of four good years. The three separate but sequential processes each demanded a robust ethics application which could evidence academic rigour. In order to gain access to military personnel for research, a thorough understanding of methodology, recruitment and data analysis had to be demonstrated. The initial submission for ethics approval was I believed, a passionate, energetic drive to bring the importance of psychosexual research to the Military healthcare providers. But on reflection, it was peppered with research holes.

Ethics approval was required from the University of Chester (UoC), the Army Scientific Assessment Centre (ASAC) and the Ministry of Defence Research Ethics Committee (MODREC). The University application was approved under the conditions that full MODREC approval could be secured.

## 5.2 Accessing military personnel

Gaining access to serving British Military personnel for research purposes is both complex and demanding. Driven by the sheer numbers of researchers hoping to gain access to this unique cohort for their studies, there is a comprehensive vetting and certifying pathway that safeguards soldiers against

unnecessary or poorly structured research. The aim of MODREC is to ensure that any studies undertaken will provide what is termed as, ‘operational utility’. That is, all approved research must demonstrate a clear benefit to the Armed Forces.

For this study, there was clinical evidence from my own work that soldiers were presenting in therapy with complex sexual concerns as well as risk-taking behaviours that were potentially damaging to their primary relationship or undermine their professional integrity. There was also evidence within a range of previous studies suggesting that military personnel are more prone to seek out reward-seeking behaviours following stress-related emotional numbing (Thandi et al., 2015; Thomsen et al., 2011). This alone was not sufficient evidence to demonstrate a need for better education for soldiers in the field of psychosexual issues, nor did it prove a need for clearer assessment and treatment pathways. Therefore, in order for this research to offer true operational utility, it had to be clear about the questions it asked, why they were necessary and how they could provide robust evidence for any need to change current processes.

The course of obtaining ethics approval from each of the three committees ensured there was a critical examination of the study’s objectives and benefit to the individual and was crucial in gaining access to participants. A detailed examination of the research by both military experts and respected academics created a front-loaded approach to the research which enforced clear structure and method prior to commencement. This ultimately placed scrutiny at the start of the process, ironing out potential researcher errors early in the study. However, it was a long and challenging process that took over 18 months to complete.

Often considered as gatekeepers, ethics committees convene to ensure reliability and validity in quantitative inquiry as well as objectivity and understanding in qualitative work (McCosker et al., 2001). For this study, there was a recognition of the sensitivity of the research field and the societal ramifications if potentially contentious outcomes were discovered. The ethics

process aimed to protect against mistakes that could be damaging to the participants, the research rigour or the wider military community.

## 5.3 Using the ethics process to refine the research project

The ASAC ethics process challenged a number of key areas:

- Sample size
    - A tri-service approach was considered unrealistic for a single researcher seeking to obtain thousands of responses. The committee encouraged the use of a robust power calculation to establish the minimum number of participants required to ensure that results would be both meaningful and manageable. Access at this stage would only be granted to a single service, however, if the study was of value, obtaining further ethics approval using the same protocol would be quicker and less complicated at a later date.
- Survey reliability
    - The initial survey was created using questions that were considered pertinent to the experience of soldiers in regard to stress and sex. They were designed by the researcher without reliability testing. Advice was therefore given to carefully review that 'so what' outcomes to this approach. Using previously validated instruments were then considered as a more appropriate method and could also provide key published norms from which to review the data.
- Participant recruitment
    - The process challenged the recruitment of participants through social media with concerns of accuracy. Changes were introduced to approach Army personnel through their military emails to offer confidence of participant authenticity.
    - To ensure the wellbeing of participants (Webber & Brunger, 2018)

### 5.3.1 ***MODREC approvals phase***

Once ASAC approval was obtained, the ethics protocol was submitted to MODREC. This culminated in a panel interview held at Whitehall where the ethics of the research was defended to an independent panel (refer to Appendix 4) for details of the panel members. MODREC approval was granted in September 2018 with conditions that research commence within a year. Approval conditions also stipulated that the study was not to fundamentally change without amendment approval and that annual reports were to be submitted in accordance with the instructions specified in JSP536. A summary of the final report on the research must be submitted to MODREC no later than 12 months following the conclusion of the research.

Expectations from the MoD are that the findings, whether positive or negative, are made accessible, with adequate consent and privacy safeguards, in a timely manner after the study has finished.

### 5.3.2 ***MODREC / ASAC involvement in the research process***

Following the ethics guidance and approval, MODREC had no further involvement with the research study. MODREC requests that information on whether the study achieved its objectives, the main findings, and arrangements for publication or dissemination of the research is made available to them. This information will be provided following completion, in accordance with JSP536.

The Army Personnel Research Capability hold a compendium of planned and ongoing Army research, which is updated quarterly. The Technical Lead on each study is required to update the compendium each quarter with detail of 'next milestones' as the only ongoing requested update. This was completed punctually throughout the research period. There is no requirement to update on feedback to participants as the study was conducted anonymously.

## 5.4 Embargo considerations

In 2019, an article centring on sexual functioning was submitted to Soldier Magazine to feature within their health and wellbeing section. Soldier Magazine

is the official magazine of the British Army with a worldwide circulation of 35,000, reaching every Army base, barracks and theatre of operations.

The two-page spread (refer to Appendix 6), not directly related to the research study, sought to elevate to importance of sexual functioning and intimate attachments in relation to soldier mental health and wellbeing. Two days later, several tabloid newspapers picked up the story for their online publications. Headings included:

> *'Stressed out soldiers having lessons in love to stop them firing blanks'*
>
> *'Army magazine Soldier recruits a sex expert to combat troops' bedroom woes'*
>
> *'Stressed soldiers get sex tips as bedroom problems can hurt them on the battlefield'*

These 'click bait' headlines created a sensationalist view of a serious subject matter which had no relation to the original story nor its intended messages. As an author, there was a sense of violation that such articles had been published under headlines that were wholly untrue and disrespectful.

Research relies on trust and benevolent motivations that carries with it a moral duty (Costley & Gibbs, 2006). Whilst there is always a possibility that any data can be misused or misinterpreted by others, there is a recognition that the risk for such opportunities should be mitigated wherever possible. This incident served as a stark reminder of the power of the media to do harm and underlined the responsibility to ensure the data from the research was managed with integrity.

### 5.4.1 ***Rationale for considering publication restrictions***

It is recognised that researchers must be true to their participants. By sharing their personal information there is an expectation that it will be used. Open access promotes the sharing of scientific research, accepting that results aim to contribute to new knowledge. In some cases, embargos are used to protect the research from crossing legal or ethical boundaries. This can range from short-term embargoes to a complete bar of access. UK statistics show that 88%

of UK universities allow restrictions on thesis or dissertation publications, suggesting that this is an aspect of research that requires consideration (SchÖPfe & Prost, 2013). From the inception of this study, there was an acknowledgement that some of its findings could be ethically complex.

Early deliberations considered the moral, legal, social and political implications should the study produce damaging statistics of the sexual functioning or behaviour of UK soldiers. The measures of sexual functioning within this mixed methods approach would have to be reviewed for the potential impact of its findings.

Implications were contemplated in relation to two specific areas.

- **The impact on soldier wellbeing**

  *How will they feel about themselves if the data showed widespread sexual failings?*

  There is evidence that those soldiers who enlist in armies, present with pre-existing feelings of strength and masculinity. Clifford and McCauley (2019) explain that sexual difficulties could potentially be viewed as 'catastrophic to the individual's sense of self.'

- **The global perception of UK military strength**

  *What will the world think of the British Army if the data showed high levels of impotency or other sexual difficulties?*

Militaries have historically promoted a culture of masculinity greater than most other professions (Clifford & McCauley, 2019). Whilst it may be considered a socially constructed ideal, it is essential to soldier mentality and strength to be considered powerful and virile. With the number of women serving in the military increasing and the face of warfare potentially changing from hand-to-hand combat to more technology-based conflicts, this may change in the future. However, the climate in 2020 suggested that ethical concerns on global perception should be considered with care.

## 5.5 Ethics conclusions

Review of the multiple ethical approval processes forced an iterative appraisal of the structure of the research and called into question some of the early survey design and method decisions. This offered invaluable insights into the potential pitfalls that had been experienced by previous studies and drove the development of a rigorous research model that would ensure meaningful results.

Changes to the original protocol were made where the study warranted refinement and only if it added accuracy to the research. The MoD acted as a sponsor in name only and were not involved outside of the ethics approval processes. Consideration of the research impact on individual soldiers was evaluated at every stage. Restrictions on publications were considered from the outset in relation to any ethical concerns regarding harm to personal self-image and wellbeing or organisational or national reputation.

## 5.6 Researcher reflections

As this element of the study drew to a close, I felt a huge sense of personal growth and an equal measure of relief. My initial protocol suggested going to over 100,000 personnel, all three service arms, using a survey that I had designed myself with no reliability scores, analysing data through descriptive and published norms. At the time, it felt so important to get as many participants as I could (doesn't everyone want a high 'n' number) that I hadn't fully comprehended the magnitude of what I was aiming to do. As ASAC once wrote to me, *'not even a team of researchers could cope with that volume of data you are aiming to collect'*. With the benefit of hindsight and wider knowledge, my initial enthusiasm and research immaturity was uncomfortable to read.

The ethics process came with huge highs and lows. Nothing will replace the overwhelming feeling of disappointment of receiving my third *major modifications required* letter as I stood crying over my email inbox at the luggage carousal at Izmir airport in Turkey. As it turned out, this was the first of

three times that the ethic process would reduce me to tears in a public place. Thankfully, the final one was with happy tears.

Despite the pain of the process, I am confident that without this rigorous and testing ethics procedure, this study would have been compromised and difficult to defend. It was a steep personal learning curve and although it took over a year and a half to complete, the learning opportunity was invaluable.

Defending my work to a twenty-strong non-military ethics and scientific panel in Whitehall demonstrated that I was ready to bring the field of psychosexual research to the British Army in a manner that was respected and convincing. It also forced me to consider the many wider implications of researching sensitive material on a global platform.

# 6 PHASE 1: Quantitative Results

*'Who doesn't like surprises?'*

## 6.1 Introduction

Presenting a lecture at Princeton University, John Tukey (1969) stated that data analysis needed to be exploratory and confirmatory. Referring to the detective work of statistics, he urged researchers to look for clues in the data, to recognise that data *could* have come by chance and more importantly, to give time to truly understand both the inference of meaning and the results from statistical tools.

As a study with a mixed methods approach, this research aimed to do exactly that: to give time to fully understand the data which was rich in content and deeply personal to those providing it. Data analysis was therefore structured into four sequential phases. Phase 1 looked at the research question in relation to statistical data, examining the correlations between instrument results for stress, sex, online behaviour and sexual compulsion. Phase 2 explored soldier experience by using Thematic Analysis (TA) to understand why soldiers were struggling with stress or sexual difficulties. Phase 3 focused on merging the quantitative results with the qualitative findings to define at-risk groups for elevated stress or poor sexual functioning. Phase 4 used these at-risk groups to rerun the Phase 1 correlation analysis to offer useful comparisons for the at-risk groups compared to the general findings.

This four-phase strategy aimed to prepare and review the quantitative, statistical data first, then reviewed the qualitative findings allowing for deeper context and meaning (Braun & Clarke, 2016; Hesse-Biber, 2015). Soldier commentary would be used to test out the messages and discourses that were established through the correlational investigations (Hesse-Biber, 2010).

This chapter focuses on Phase 1 of the data analysis, looking at the quantitative findings against 6 specific research questions. The dependent variable for this

study was stress. Analysis focussed on how stress impacted on soldier experience in relation to sexual functioning and behaviour.

## 6.2 Descriptive results

### *6.2.1* ***Stress***

#### *6.2.1.1* ***Total soldier stress experience by sex***

When considering levels of stress by sex, the average male soldier reported an elevated perception of stress M=16.6 (SD 7.6) compared to their female counterparts M=15.8 (SD 7.4), (refer to Table 13).

Table 13: *Norm table for self-reported stress levels*

| | Civilian Norms | | | British Army Soldiers | | |
|---|---|---|---|---|---|---|
| Sex | n | M | SD | n | M | SD |
| Male | 926 | 12.1 | 5.9 | 362 | 16.6 | 7.6 |
| Female | 140 | 13.7 | 6.6 | 42 | 16.0 | 7.4 |

**One sample t-tests**

Using published means by Cohen (1994), results of the One-sample t-test showed that the mean stress levels of male soldiers [Mean = 16.6, SD = 7.6] was statistically significant at the 0.05 level of significance (t = 11.26, df = 361, p = <.001) from the [Test value = 12.1]. The [Mean difference = 4.47, 95% CI (3.69,5.26)].

The results for the One-sample t-test looking at female stress showed that [Mean = 16.0, SD 7.6] was almost statistically significant at the .05 level of significance (t = 1.996, df = 41, p = .053) from the [Test value = 13.7]. The [Mean difference = 2.28, 95% CI (-0.27, 4.58)]. This result may have shown as non-significant due to the low number of female soldier participants. Results could convey uncertainty within the data but remain close enough to be considered useful (Thiese et al., 2016).

There is a notable difference in the mean stress of British Army soldiers and the published civilian population. Both sexes scored higher than average against civilian mean scores with male stress levels 4.5 points higher (M=16.6 compared to 12.1) and females, 2.1 points higher (M=15.8 compared to 13.7). Based on validated scoring methods (Sheldon et al., 2012) both sexes would be classified as moderately stressed.

Results from published norms are from a US civilian study so cannot offer direct comparisons: however, it did place the results of British soldiers alongside a wider validated study to give a measure of current experience against non-military participants.

#### *6.2.1.2* ***The stress experience of female soldiers***

The literature review demonstrated that female soldiers are under-represented in most academic papers relating to stress or sexual functioning. It also ascertained that women respond differently to stress, both biologically and emotionally (Balhara et al., 2012; Christiansen & Hansen, 2015). This study did not aim to focus specifically on differences between the sexes but accepted that given the representative demographic split, it might offer useful information. This would be critical to support any recommendations for psychological assessment, treatment and education.

The highest scoring group by sex for reported stress were female soldiers aged 51+ M=27.5 (SD 0.7). For analysis they have been grouped with soldiers over 40 who collectively demonstrated raised scores, (refer to Table 14). Their male counterparts fared much better with results for aged 51+ M=15.7 (7.3) and male soldiers aged 41+ M=15.8 (SD 7.5).

Table 14: *British Army female soldier stress levels by age - analysed against the PSS comparison group mean (8.41)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Stress level*** | | | | | | |
| 18-30 | 10 | 15.3 | 7.2 | 9 | 1.15 | ≤.001 |
| 31-40 | 20 | 14.4 | 7.8 | 19 | 3.44 | ≤.001 |
| 41+ | 12 | 19.2 | 6.4 | 11 | 5.85 | ≤.001 |

This group of aged 41+ women would be categorised as at the higher end of moderately stressed in comparison to soldiers considered to have low stress and sexual functioning and are one of the highest stress groups of this study. 41% of women in this age range have a stress score over 20. Of that 41%, 17% are considered to be living with high-risk stress levels. This reflects research in the US which demonstrated that women in the military may experience greater occupational stressors due to the pressures associated with working in a male dominated arena (Bray et al., 2001).

Secondly, those females aged 18-25 also demonstrated elevated stress scores. Although numbers are low in this group (n=3) and have been grouped with 26-30 year old soldiers for analysis, this could suggest that female soldiers who are either early or late in their careers might feel the most pressure.

#### *6.2.1.3* ***High-risk stress categories***

When comparing how soldiers scored in relation to each other using the PSS scoring methods, analysis showed that within the overall data, 9.16% reported stress levels that were considered to be high and problematic. 224 soldiers reported stress levels that were considered moderate showing that in this sample population, almost two thirds of personnel were considered to be coping with elevated stress.

Table 15: *British Army soldier stress levels by risk category – analysed against the PSS comparison group mean (8.41)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Stress level*** | | | | | | |
| Low | 143 | 8.6 | 3.4 | 142 | .73 | .477 |
| Moderate | 224 | 19.2 | 3.6 | 223 | 44.84 | ≤.001 |
| High | 37 | 30.5 | 3.4 | 36 | 39.27 | ≤.001 |

Within the data, two groups demonstrated levels of stress that were bordering on harmful. These groups were needed to help inform Phase 3 and 4 of the study, which looked explicitly at whether stress and sexual functioning was correlated to a lesser or greater degree for personnel demonstrating problematic stress.

## Soldiers with self-reported high levels of stress

The highest levels of reported stress were:

- Soldiers that have served for over 20 years who were single, M=24.8 (SD 4.7)
- Other ranks who lived alone, M=20.2 (6.3)
- Separated soldiers, M=24.6 (SD 7.3)
    - Combined separated and divorced soldiers, M=22.3 (SD 9.1)
- Soldiers in a period of transition (waiting to leave home, parents or ex-partners), M=21 (SD 2.7)
- Female soldiers aged over 40, M=19.2 (SD 6.4)
    - Female soldiers over 51+ raising to M=27.5 (SD 0.7)

There were also a number of smaller groups that self-reported significantly lower stress levels in comparison to the study mean and lower than published civilian norms.

**Soldiers with self-reported low levels of stress**

- Soldiers with a less than 1 years' service, M=10.3 (8.6)
- Soldiers on tour or exercise, M=11.0 (SD 9.4)
- Warrant Officers, M=9 (SD 1.4)

### *6.2.1.4* ***Soldier stress experience by age***

Describing the family and the military as greedy institutions, Segal (1986) argued that soldiers were exposed to stressors both at home and at work. This raised questions in this study about life stages and whether soldiers who were likely to have younger, more demanding families would feel stress more acutely. Results showed the personnel aged between 25-30 had the highest reported levels of stress across this study. It is not clear whether this is due to increased workload and responsibility as they promote through the ranks or from pressures elsewhere.

Soldiers over the age of 51 and younger individuals aged 18-25 also demonstrated higher stress levels, perhaps relating to transitional stages of their career.

Table 16: *Total sample British Army soldier stress levels by age - analysed against the PSS comparison group mean (8.41)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Age*** | | | | | | |
| 18-25 | 43 | 17.1 | 7.8 | 42 | 7.30 | ≤.001 |
| 26-30 | 73 | 18.0 | 7.7 | 72 | 10.73 | ≤.001 |
| 31-40 | 176 | 16.0 | 7.5 | 175 | 13.45 | ≤.001 |
| 41-50 | 95 | 16.0 | 7.4 | 94 | 10.01 | ≤.001 |
| 51+ | 17 | 17.1 | 7.9 | 16 | 4.56 | ≤.001 |

### *6.2.1.5* ***Soldier stress experience by rank***

The perception of job strain and personal control have known associations with both age and rank. There are also proven links with lower rank and increased

marital distress (Anderson et al., 2011; Fear et al., 2009). Recognising the broad variance in occupational demand depending on role, tempo and leadership, it was deemed helpful to understand within this study how rank changed the soldier stress experience and sexual behaviour.

OR's showed the highest level of sexual difficulties. WO's reported the lowest levels of sexual difficulty, however numbers in this subgroup were small.

Table 17: Total sample *British Army soldier stress levels by rank - analysed against the PSS comparison group mean (8.41)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Rank*** | | | | | | |
| OFFR | 179 | 16.07 | 7.1 | 178 | 14.43 | ≤.001 |
| WO | 5 | 15.0 | 5.8 | 4 | 2.53 | .065 |
| NCO | 169 | 16.4 | 8.2 | 168 | 12.64 | ≤.001 |
| OR | 51 | 18.6 | 6.5 | 50 | 11.10 | ≤.001 |

Whilst OR's have the highest overall mean scores; they only accounted for 12% of the high-risk groups. NCO's and Officers made up most of the participants scoring as high-risk.

#### *6.2.1.6* ***Soldier stress experience by length of service***

It has been shown in some studies that length of service has an impact on the work-life balance, with more experienced soldiers and their partners developing good stress appraisal and coping techniques as well as a lessening need to prove themselves in a masochistic culture (Anderson et al., 2011; Keeling, 2014). Therefore, understanding how length of service impacts on soldier stress experience is helpful in gaining a wider picture of protective or causal factors.

When comparing reported scores, the 6-10-year category showed the highest levels of stress. In general, there was little difference between groups.

Table 18: *British Army soldier stress levels by length of service - analysed against the PSS comparison group mean (8.41)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Length of service*** | | | | | | |
| 0-5 years | 54 | 16.5 | 7.9 | 53 | 7.54 | ≤.001 |
| 6-10 years | 73 | 17.0 | 7.7 | 72 | 9.50 | ≤.001 |
| 11-19 years | 164 | 16.1 | 7.5 | 163 | 13.17 | ≤.001 |
| 20+ years | 113 | 16.8 | 7.4 | 112 | 12.06 | ≤.001 |

Soldiers with a >1 years' service had a broad spread of scores M=10.3, with one participant scoring a total of 1 which may have skewed the data for this small group. Soldiers who have served between 11-19 years represented 40% of the high-risk participants, the largest percentage group.

#### *6.2.1.7* ***Soldier stress experience by relationship***

Table 19 explains the results for stress by relationship status. Not unexpectedly, those soldiers currently separated demonstrated the most at-risk category by relationship status. Those with a relationship under one-year described the least stress; slightly lower than those who considered themselves to be married / civil partnership or single.

Table 19: *British Army stress levels by relationship status - analysed against the PSS comparison group mean (8.41)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Relationship status*** | | | | | | |
| Single | 45 | 16.8 | 7.4 | 44 | 7.58 | ≤.001 |
| Relationship < 1 year | 22 | 15.0 | 7.9 | 21 | 3.89 | .001 |
| Relationship > 1 year | 79 | 17.2 | 8.2 | 78 | 9.60 | ≤.001 |
| Married / civil partnership | 244 | 16.1 | 7.1 | 243 | 16.77 | ≤.001 |
| Separated / Divorced | 14 | 22.3 | 9.1 | 13 | 5.71 | ≤.001 |

### *6.2.1.8* ***Soldier stress experience by living arrangements***

Critical to the research questions focusing on sexual behaviour online (refer to chapter 6.3.6), I sought to understand if isolation and solitary living contributed to higher levels of technology-mediated sexual interaction. Therefore, information on how living arrangements impacted on stress was a useful category analysis.

Table 20 showed some of the widest variance of stress between categories. Whilst the number of participants currently on tour or on exercise is low, it clearly demonstrated a significant decrease in stress for this group. This underlines the theory that when a soldier is mission specific, such as focused on the job, and not trying to balance the needs of work and the family, there is less of a psychological demand.

Table 20: *British Army soldier stress levels by current living arrangement*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Living arrangement*** | | | | | | |
| Living alone | 50 | 18.0 | 8.5 | 49 | 7.97 | ≤.001 |
| Living in shared accommodation | 39 | 14.6 | 6.5 | 38 | 5.89 | ≤.001 |
| Weekly commuting | 78 | 16.8 | 7.4 | 77 | 10.00 | ≤.001 |
| Living with partner in UK | 177 | 16.8 | 7.3 | 176 | 15.42 | ≤.001 |
| Living with partner overseas | 48 | 15.5 | 7.9 | 47 | 6.21 | ≤.001 |
| Currently on tour / exercise | 8 | 11.0 | 9.4 | 7 | .777 | .463 |

Results for living alone showed elevated stress levels. Whilst this argues against the premise that less familial demand is less stressful, research has shown that loneliness triples the risk for common mental disorders (Jacob, et al., 2019). This may connect with some recent debate on whether the introduction of single living accommodation has removed group cohesion and the moral support that is provided in the shared accommodation block.

### 6.2.2 ***Sexual functioning***

Exploring sexual functioning at a soldier level offered a snapshot of current experience for this sample of soldiers. Understanding who is most affected and the types of sexual concerns would help support the study's discussion on the research questions related to sexual behaviour.

Using published NATSAL-SF means (refer to Figure 14), results of the One-sample t-test showed that the mean stress levels of male soldiers [Mean = 11.3, SD = 7.5] was statistically significant at the 0.05 level of significance (t = 10.16, df = 403, p = <.001) from the [Test value = 7.53]. The [Mean difference = 3.77, 95% CI (3.04,4.50)].

In this section, I sought to explore which soldiers were most at risk for poor sexual functioning based on soldier scores on the NATSAL-SF measure.

Table 21: *British Army soldier sexual functioning levels by risk category*

| Soldier risk levels by category | | | | |
|---|---|---|---|---|
| | Category | N | % | |
| ***Sexual functioning score*** | | | | |
| | 0-13.4 | 254 | 62.9% | Low risk |
| | >13.4 | 150 | 37.1% | At risk |
| Total | | 404 | 100.0% | |

When considering the total sample, 37.1% of participants were considered at-risk for poor sexual functioning.

Table 22 showed that there is little difference between the percentage of male (37.0%) and female soldiers (38.1%) based on their sexual function measure scores. If compared to UK population norms on the NATSAL-SF score, 20% would be expected to report low sexual function, therefore low sexual function appears more prevalent in this army population. Differences between male and female soldiers were not statistically significant.

Table 22: *NATSAL-SF scores by sex*

| | Category | N | % | p |
|---|---|---|---|---|
| ***Category*** | | | | |
| | Men | 134 | 37.0% | 0.2673 |
| | Women | 16 | 38.1% | |

### 6.2.2.1 ***How do British soldiers rate their sexual functioning compared to published normative data?***

When reviewing specific categories of sexual difficulties, male soldiers reported higher levels of problematic sexual functioning than the published norms for the UK. This was across most age groups and all total percentage subscale scores.

There were notably high results for desire disorders for men aged between 31-40 (30.1%) and difficulty reaching climax for those nearing the end of their careers at 51 years old and over (46.7%). This aligns with data from NATSAL-3 which showed that poor sexual functioning is associated with increased age (Mitchell et al., 2013) and work by Wilcox et al. (2014) which evidenced that soldiers aged between 36-40 were most at-risk of developing sexual difficulties.

Table 23 showed the percentage of male soldiers experiencing sexual difficulties.

Table 23: *Comparison against UK published NATSAL-SF results for sexual difficulties – Males*

| | NATSAL-SF (2013) | British Army Male Soldiers (2019) | *p value |
|---|---|---|---|
| | % | % | |
| Lacked interest in having sex | 14.9 | 27.3 | <0.0001 |
| Lacked enjoyment in sex | 4.8 | 21.5 | <0.0001 |
| Felt anxious during sex | 5.4 | 19.3 | 0.0004 |
| Felt physical pain as a result of sex | 1.8 | 4.7 | <0.0001 |
| Felt no excitement or arousal during sex | 3.1 | 14.6 | <0.0001 |
| Difficultly in reaching climax | 9.2 | 22.1 | <0.0001 |
| Reached climax more quickly than you would like | 14.9 | 37.0 | <0.0001 |
| Trouble getting or keeping an erection | 12.9 | 21.3 | <0.0001 |

* Binomial test for statistically significant difference

A binomial test was run to compare the percentage of soldiers reporting sexual difficulties within this study to the percentage results of the UK NATSAL-SF population study. Results showed that both male and females soldiers demonstrated a higher percentage of sexual difficulties across all 9 line items (refer to Table 23 and Table 24).

There are a number of reasons why this study data might be higher than the civilian population. Firstly, soldiers honest barrack conversations might normalise discussions surrounding sex making them more comfortable being honest. Secondly, the recruitment process may have contributed to self-selection bias and finally, the socially constructed masculinity of soldiers (both male and female) could lead them to measure themselves more critically against their own sexual performance or experience.

Table 24 showed the percentage of female soldiers experiencing sexual difficulties by age group.

Table 24: *Comparison against UK published NATSAL-SF results for sexual difficulties - Females*

| | NATSAL-SF (2013) | British Army Female Soldiers (2019) | *p value |
|---|---|---|---|
| | % | % | |
| Lacked interest in having sex | 34·2 | 42.9 | 0.1534 |
| Lacked enjoyment in sex | 12·1 | 23.8 | 0.0256 |
| Felt anxious during sex | 5·2 | 23.8 | <0.0001 |
| Felt physical pain as a result of sex | 7·5 | 16.7 | 0.0353 |
| Felt no excitement or arousal during sex | 8·2 | 14.3 | 0.1263 |
| Difficultly in reaching climax | 16·3 | 42.9 | <0.0001 |
| Reached climax more quickly than you would like | 2·3 | 2.4 | 0.6237 |
| Uncomfortably dry vagina | 13·0 | 16.7 | 0.3013 |

* Binomial test for statistically significant difference

For some line items comparing female soldiers, results did not prove to be statistically significant. There could be other factors that may have impacted on the results such as low participant numbers in the sample.

Overall, data on sexual functioning exposed physical and emotional problematic sexual experiences spanning a number of difficulties that should be explored further.

#### *6.2.2.2* ***Sexual functioning by subgroup***

Linked to understanding which groups of soldiers were experiencing sexual difficulties, subgroups were compared against the comparison group mean to demonstrate which soldiers differed the most from those soldiers reporting low stress and good sexual functioning (refer to Table 11)

#### *6.2.2.3* ***Soldier sexual functioning by age***

Given the accepted decline in sexual functioning due to physical changes that occur with age, it was unsurprising that soldiers aged over 51 reported the greatest levels of low sexual functioning and soldiers under 25 registered the

lowest problems. When considering the mid age range, there was little difference between 26-40 with marginally lower scores for 26-30 year old soldiers.

Table 25: *British Army soldier sexual functioning by age - analysed against the comparison group mean (5.53)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Rank*** | | | | | | |
| 18-25 | 43 | 8.8 | 6.7 | 42 | 3.17 | .003 |
| 26-30 | 73 | 11.0 | 6.9 | 72 | 6.71 | ≤.001 |
| 31-40 | 176 | 11.7 | 8.0 | 175 | 10.18 | ≤.001 |
| 41-50 | 95 | 11.7 | 7.4 | 94 | 8.06 | ≤.001 |
| 51+ | 17 | 13.7 | 5.0 | 16 | 6.67 | ≤.001 |

### *6.2.2.4* ***Soldier sexual functioning by rank***

Whilst there is evidence of links between stress and rank (Hourani et al., 2006), in previous research with veterans, rank did not appear to influence levels of sexual difficulties (Breyer et al., 2014). However, in this study, there were notable differences in the reported levels of sexual function across rank with NCO's showing the most difficulties. WO's had noticeably lower levels of concerns which were not statistically different to the comparison group of well-functioning soldiers, although numbers in this group were small.

Table 26: *British Army soldier sexual functioning by rank - analysed against the comparison group mean (5.53)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Rank*** | | | | | | |
| OFFR | 179 | 11.3 | 6.9 | 178 | 11.11 | ≤.001 |
| WO | 5 | 8.3 | 6.5 | 4 | .948 | .397 |
| NCO | 169 | 12.1 | 8.2 | 168 | 10.27 | ≤.001 |
| OR | 51 | 9.2 | 6.1 | 50 | 4.28 | ≤.001 |

### 6.2.2.5 ***Soldier sexual functioning by length of service***

Much like the results for age (refer to Table 25) reported levels of sexual difficulties increased with length of service. This aligns with expectations that sexual problems are more prevalent in older individuals due to the aging process and potential increase in health concerns and factors such as medication.

Table 27: *British Army soldier sexual functioning by length of service – analysed against the comparison group mean (5.53)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Length of service*** | | | | | | |
| 0-5 years | 54 | 8.7 | 6.7 | 53 | 3.50 | .001 |
| 6-10 years | 73 | 10.0 | 6.2 | 72 | 6.17 | ≤.001 |
| 11-19 years | 164 | 11.6 | 7.7 | 163 | 10.17 | ≤.001 |
| 20+ years | 113 | 13.0 | 7.9 | 112 | 10.04 | ≤.001 |

### 6.2.2.6 ***Soldier sexual functioning by relationship status***

Soldiers that were divorced or separated demonstrated the highest levels of sexual difficulties for one single group. Soldiers who were in a new relationship of less than one year showed low levels of difficulties.

Table 28: British Army soldier sexual functioning by relationship status – analysed against the comparison group mean (5.53)

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Relationship status*** | | | | | | |
| Single | 45 | 12.3 | 5.8 | 44 | 7.84 | ≤.001 |
| Relationship < 1 year | 22 | 6.7 | 6.5 | 21 | .825 | .419 |
| Relationship > 1 year | 79 | 10.5 | 8.0 | 78 | 5.45 | ≤.001 |
| Married / civil partnership | 244 | 11.4 | 7.3 | 243 | 12.68 | ≤.0010 |
| Separated / Divorced | 14 | 17.9 | 8.8 | 13 | 5.35 | ≤.001 |

### 6.2.2.7 ***Soldier sexual functioning by living arrangement***

Living arrangements formed part of one of the main research questions (refer to 6.3.6) and offered interesting insights as to soldier behaviour in relation to current housing. Weekly commuting is known to contribute to stress (Olsson et al., 2013) and in this study demonstrated the uppermost levels of sexual difficulty by living arrangement.

Table 29: *British Army soldier sexual functioning by living arrangement – analysed against the comparison group mean (5.53)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Living arrangement*** | | | | | | |
| Living alone | 50 | 11.3 | 7.8 | 49 | 5.27 | ≤.001 |
| Living in shared accommodation | 39 | 10.8 | 6.9 | 38 | 4.75 | ≤.001 |
| Weekly commuting | 78 | 12.2 | 7.2 | 77 | 8.20 | ≤.001 |
| Living with partner in UK | 177 | 11.4 | 7.6 | 176 | 10.25 | ≤.001 |
| Living with partner overseas | 48 | 10.0 | 7.4 | 47 | 4.19 | ≤.0010 |
| Currently on tour / exercise | 8 | 10.4 | 8.1 | 7 | 1.68 | .136 |

Overall, within this study, groups that showed the highest reported impact of problematic sexual functioning included soldiers aged 40 and over, non-commissioned officers, soldiers that lived alone or overseas with their partners and those personnel who had served more than 20 years. Those individuals who were separated from their partners reported the most concerns with 75% of soldier experiencing sexual difficulties of some description.

It was hoped that through the qualitative findings from Chapter 7, the voices of these soldiers, would offer some context into how additive stress might impact on their primary sexual relationships and help identify those soldiers who may be more at-risk for problematic experiences.

### 6.2.3 ***Compulsive sexual behaviour (CSB)***

Information on sexually compulsive behaviour was critical in understanding the link between stress overload and the reward-seeking behaviour of soldiers. As known risk takers in a predominately masculine world where soldiers

encountered long periods of separation, there was a working assumption that online sexual behaviour may be higher than in the general populous. However, there was no research on whether those online behaviours were problematic or compulsive. Descriptive analysis was used to understand mean scores and standard deviations in order to emphasise those soldiers with a higher prevalence of CSB. A cut off score of ≥ 24 was used to indicate potential problems with sexual compulsivity (Fisher et al., 2010).

Using the mean results from Cooper et al. (2000), results of the One-sample t-test showed that the reported mean of compulsive sexual behaviour [Mean = 13.65, SD = 4.9] was statistically significant at the 0.05 level of significance (t = -16.5, df = 403, p = <0.001) from the [Test value = 17.63]. The [Mean difference = -3.98, 95% CI (-4.46,-3.50)].

In general, sexual compulsivity did not present as problematic within the British Army. Results showed compulsive sexual behaviour (CSB) low risk scores for male and female soldiers with a combined M=13.6 (SD 4.9).

Table 30: *Sexual compulsivity within the British Army by sex*

| ***Sexually compulsive behaviour*** | | | | |
|---|---|---|---|---|
| Category | N | M | S.D. | *p* |
| Male | 362 | 13.9 | 5.0 | ≤.001 |
| Female | 42 | 11.1 | 2.0 | |

The assumption of homogeneity of variance was tested and found not to be tenable using Levene's Test. Therefore, a Mann-Whitney U test was conducted and demonstrated a statistically significant difference between the sexes, (U=4018, N1=362, N2=42, p = <0.0001, two-tailed).

Table 31 showed that there were a small number (n=24) who scored within the high-risk range, equalling 6% of participant response for high levels of sexual compulsivity, M=28.6 (SD 4.1). Within this 6%, 100% identify as male.

Table 31: *Number of high-risk soldiers for problematic compulsive sexual behaviour*

| | Category | N | % | |
|---|---|---|---|---|
| ***CSB scoring*** | | | | |
| | 0-23 | 380 | 94% | low |
| | 24-40 | 24 | 6% | high |
| Total | | 404 | 100.0% | |

When considering the 6% of soldiers considered as high-risk groups, in terms of overall soldier numbers, they potentially represented 4,408 serving soldiers who could be engaging in sexually compulsive activity at one time.

### 6.2.3.1 ***Soldier compulsive sexual behaviour by age***

Within the sample, soldiers over the age of 51 had the lowest mean reported scores for compulsive sexual behaviour although when compared to the comparison group, the results were not statistically significant. Soldiers aged between 26-30 had the highest levels of compulsivity.

Table 32: British Army soldier sexual functioning by age - analysed against the comparison group mean (3.82)

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Rank*** | | | | | | |
| 18-25 | 43 | 13.5 | 4.6 | 42 | 1.92 | .062 |
| 26-30 | 73 | 14.7 | 6.2 | 72 | 3.613 | .001 |
| 31-40 | 176 | 13.5 | 4.4 | 175 | 4.175 | ≤.001 |
| 41-50 | 95 | 13.4 | 4.7 | 94 | 2.548 | .012 |
| 51+ | 17 | 12.9 | 4.2 | 16 | .756 | .461 |

### 6.2.4 ***Online sexual activity (OSA)***

Using published ISST means (Delmonico & Miller, 2003), results of the One-sample t-test showed that the mean stress levels of male soldiers [Mean = 4.79, SD = 4.24] was statistically significant at the 0.05 level of significance (t = -23.17, df = 403, p = <.001) from the [Test value = 9.68]. The [Mean difference = -4.89, 95% CI (-5.30,-4.47)].

In terms of OSA activity, 15% of participants reported no online sexual activity at all. 86.6% were using online sexual interests at levels that were considered low risk. 13.4% of participants were considered *at-risk* or *high-risk* for problematic online sexual behaviours. This represented a percentage that is less than the general population result of 20%, originally reported by the Delmonico and Miller (2003). Whilst this study is not directly assessing military personnel, it does offer a comparable measure of civilian online sexual activity.

Table 33: *Number of high-risk soldiers for problematic online sexual activity*

| | Category | N | % | |
|---|---|---|---|---|
| ***OSA score*** | | | | |
| | 1-8 | 350 | 86.6 | Low-risk |
| | 9-18 | 47 | 11.6 | At-risk |
| | >19 | 7 | 1.8 | High-risk |
| Total | | 404 | 100.0% | |

However, 13.4% of soldiers still represented a potential of almost 10,000 individuals who could be engaging in risky or problematic behaviours. This is a sizable number and has wider implications in terms of national security and threat of exploitation. This is considered in more detail in the Discussion Chapter 10. From the 2% demonstrating high-risk (of which all were male), 71% reported running across illegal websites.

Across all risk categories, 5% of the total sample admitted to finding illegal material during their OSA activity online, potentially equating to 3,674 soldiers (91% men and 9% women).

Table 34: *Online sexual activity within the British Army by sex*

| ***Online sexual activity*** | | | | |
|---|---|---|---|---|
| Category | N | M | S.D. | *p* |
| Male | 362 | 5.11 | 4.28 | ≤.001 |
| Female | 42 | 2.10 | 2.61 | |

Male soldiers scored higher for problematic online sexual activity, although the average rate was still considered low risk (refer to Table 34). There were statistically significant differences between men and women in relation to OSA behaviour, with only 2.4% of females were considered at-risk and no females considered high-risk.

### *6.2.4.1* ***Soldier online sexual activity by living arrangement***

One of the 6 main research questions centres on the relationship between OSA and living alone. It was therefore useful to look specifically at the mean score for online sexual behaviour by living arrangements. When compared to the comparison group who had low levels of stress and healthy sexual function, there was a statistical difference between those all groups apart from those living overseas with their partners and soldiers who were currently on tour.

Table 35: *British Army soldier online sexual activity by living arrangement – analysed against the comparison group mean (3.82)*

| *Category* | N | M | SD | *df* | *t* | *p* |
|---|---|---|---|---|---|---|
| ***Living arrangement*** | | | | | | |
| Living alone | 50 | 5.2 | 4.5 | 49 | 2.118 | .039 |
| Living in shared accommodation | 39 | 6.0 | 5.1 | 38 | 2.656 | .011 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Weekly commuting | 78 | 4.7 | 3.4 | 77 | 2.263 | 0.26 |
| Living with partner in UK | 177 | 4.5 | 4.6 | 176 | 2.029 | .044 |
| Living with partner overseas | 48 | 4.2 | 3.2 | 47 | .840 | .405 |
| Currently on tour / exercise | 8 | 5.8 | 3.2 | 7 | 1.685 | .136 |

Soldiers who lived in shared accommodation reported the highest levels of online sexual activity, along with soldiers currently on tour or exercise and those soldiers who lived alone.

## 6.3 Results from the research question analysis

This section aims to answer the 6 main research questions using data analysis techniques such as correlation analysis, logistic regression and one-way ANOVA calculations. These statical tests will demonstrate the links between the 4 main variables; stress, sexual functioning, online sexual activity and compulsive behaviour.

Correlation is defined as “a relation existing between phenomena or things or between mathematical or statistical variables which tend to vary, be associated, or occur together in a way not expected by chance alone” (Akoglu, 2018, p. 91).

### *6.3.1* ***Q1: Is stress associated with sexual difficulties?***

Results in Table 36 showed a moderate positive correlation between stress and the problematic sexual functioning of British Army soldiers, $r(402) = .494 (p<0.01)$. Given that the p-value is less than 0.01, this data were viewed as demonstrating statistical significance.

**Table 36***: Correlation between stress and sexual functioning*

| | n | *r* |
|---|---|---|
| ***Total sample*** | | |
| Sexual functioning | 404 | .44** |
| ***Key subscales*** | | |
| Sexual difficulties | 404 | .40** |
| Sexual partnership[1] | 308 | .34** |

**p<0.01

[1] This subscale only includes those soldiers who reported engaging in sex, being married or in a relationship in the last 12 months

There was a greater positive correlation between stress and increased sexual difficulties *r*(402) = .40 (p<.01), than between stress and lower sexual partnership r(306) = .34 (p<.01) demonstrating that sexual difficulties may be more affected by stress than partnership.

Table 37: *Correlation between stress and sexual functioning by sex*

| | Male soldiers | | Female soldiers | |
|---|---|---|---|---|
| | *n* | *r* | *n* | *r* |
| Sexual functioning | 362 | .50** | 42 | .50** |
| ***Key subscales*** | | | | |
| Sexual difficulties | 362 | .02 | 42 | .47** |
| Sexual partnership[1] | 285 | .37** | 23 | .28 |

*p<.05 **p<.01

[1] This subscale only includes those soldiers who reported engaging in sex, being married or in a relationship in the last 12 months

Table 37 showed that for both male and female soldiers, stress was strongly positively correlated to sexual functioning, *r* (360) = .50, *p<.001 and r* (40) = .50, *p<.001* respectively. The sexes produced differing results for sexual difficulties and partnership with male soldiers showing a moderate positive correlation between stress and sexual partnership *r* (283) = .37, *p<.001* with no correlation between stress and sexual difficulties. However, female soldiers produced

opposite results with no correlation between stress and sexual partnership but a strong positive correlation between stress and sexual difficulties *r* (40) = .47, *p<.001.* This suggests that men and women are impacted by stress differently.

A hierarchical multiple regression was run in SPSS to understand the link between stress and sexual functioning when controlled by the different sexes. Table 38 showed that the model predicted that sex demonstrated no statistical difference. Overall regression showed that stress accounted for 25% of the model, with an adjusted $R^2$ of 24%, representing a small effect size, F(2,401) = 65.263, p<.001.

Table 38: *Regression analysis showing sex and stress as predictor of sexual functioning*

| Variable | | Cumulative | | |
|---|---|---|---|---|
| | | *$R^2$* | *Adjusted $R^2$* | *F-change* |
| ***Step 1*** | The sexes | -.002 | .000 | F(1,402) =.000 |
| ***Step 2*** | Stress | .246 | .242 | F(1,401) = 130.53** |

* p<.05 ** p<.01

A review of soldier age did not appear to demonstrate notable differences across groups, with most age ranges demonstrating a similar positive correlation between stress and sexual functioning (refer to Table 39).

Table 39: *Correlation between stress and sexual functioning by age*

| | | *n* | *r* |
|---|---|---|---|
| ***Age*** | | | |
| | 18-25 years old | 43 | .53** |
| | 26-30 years old | 73 | .48** |
| | 31-40 years old | 176 | .54** |
| | 41-50 years old | 95 | .47** |
| | 51+ years old | 17 | .55* |

* p<.05 ** p<.01

### 6.3.2 ***Q.2: Is stress associated with online sexual activity (OSA)?***

The study showed statistically significant relationship between self-reported stress and increased levels of OSA, $r(341) = .19$ ($p<.01$), (refer to Table 40) yet the strength of that correlation was classified as low.

Table 40: *Correlation between stress and OSA for soldiers*

| | *n* | *r* |
|---|---|---|
| ***Total sample*** | | |
| Online sexual activity | 404 | .19** |

* p<.05 ** p<.01

Results showed that stress had a low correlation with soldier online sexual behaviour, suggesting that for those 15.7% of soldiers reporting problematic OSA, it was unlikely to be caused by elevated pressure. However, Table 41 showed that there is a difference between male and female experience, with stress having a positive correlation with OSA for male soldiers $r(360) = .20$, $p<.001$ but not showing a correlation for female personnel.

Table 41: *Correlation between stress and OSA for soldiers by sex*

| | Male soldiers | | Female soldiers | |
|---|---|---|---|---|
| | n | r | n | r |
| Online sexual activity | 362 | 0.20** | 42 | -.04 |

* p<.05 ** p<.01

A hierarchical multiple regression (refer to Table 42) was run in SPSS to understand the link between stress and online sexual activity when controlled by the sexes. Table 42 showed that the model predicted that the sexes demonstrated less than 5% difference in variation and the overall regression showed that stress accounted for less than 8% of variance in sexual functioning, representing a small effect size.

Table 42: *Regression analysis showing sex and stress as predictors of online sexual activity*

| Variable | | Cumulative | | |
|---|---|---|---|---|
| | | $R^2$ | Adjusted $R^2$ | *F-change* |
| ***Step 1*** | The sexes | .047 | .045 | F(1,402) = 19.91** |
| ***Step 2*** | Stress | .079 | .075 | F(1,401) = 14.06** |

* p<.05 ** p<.01

Table 43 showed that for stress and OSA, there is a range of difference between age groups. Whilst the 18-25 year olds, 41-50 year olds and the over 51 year olds all showed no correlations; 26-30 *and 41-50* year old soldiers demonstrated a low positive correlation *r* (71) = .27, *p<.05 and r* (174) = .16, *p<.05* respectively.

Table 43: *Correlation between stress and OSA for soldiers by age*

| | | n | r |
|---|---|---|---|
| ***Age*** | | | |
| | 18-25 years old | 43 | .10 |
| | 26-30 years old | 73 | .27* |
| | 31-40 years old | 176 | .16* |
| | 41-50 years old | 95 | .20 |
| | 51+ years old | 17 | .04 |

*p<.05

### 6.3.3 ***Q.3: Is online sexual activity (OSA) associated with sexually compulsive behaviour (CSB)?***

The relationship between online sexual activity and sexually compulsive behaviour is statistically significant and strongly positively correlated *r*(402) = 0.56 (*p*<.01) (refer to Table 44). There was a notable link between an increased

level of sexual compulsivity and increase use of the internet for sexual purposes.

Table 44: *Correlation between OSA* and CSB

| | n | *r* |
|---|---|---|
| ***All ranks*** | | |
| Total sample | 404 | .56** |

** p<.01

Table 45 evidences further difference by sex, presenting a strong positive correlation between CSB and OSA for male soldiers, r(318) = 0.55 (*p*< .01) with no correlation between variables for females.

Table 45: *Correlation between CSB and OSA for by sex*

| | Male soldiers | | Female soldiers | |
|---|---|---|---|---|
| | n | r | n | r |
| Online sexual activity | 320 | 0.548** | 23 | .334 |

**p<.01

A hierarchical multiple regression was run in SPSS to understand the link between online sexual activity and compulsive sexual behaviour when controlled by sex. Table 46 showed the model predicted that a soldiers sex demonstrated a small effect with 3% difference in variation. The model showed that online sexual activity accounted for 31% of variance in compulsive sexual behaviour, representing a large effect size

Table 46: *Regression analysis showing how a persons sex and online sexual activity predicts compulsive sexual behaviour*

| Variable | | | | Cumulative |
|---|---|---|---|---|
| | | $R^2$ | Adjusted $R^2$ | *F-change* |
| ***Step 1*** | The sexes | .033 | .030 | F(1,402)=13.64** |
| ***Step 2*** | Online sexual activity | .310 | .308 | F(1,401) = 164.02** |

* p<.05 ** p<.01

Table 47 shows that there is evidence of varying experience by age groups, with those soldiers at the start and end of their careers showing moderate or no correlations between CSB and OSA. Whereas those personnel in the mid age ranges all demonstrating a strong positive correlation between compulsive behaviours and online activity.

Table 47: *Correlation between CSB and OSA for by age*

| | | n | r |
|---|---|---|---|
| ***Age*** | | | |
| | 18-25 years old | 39 | .337* |
| | 26-30 years old | 68 | .661** |
| | 31-40 years old | 152 | .596** |
| | 41-50 years old | 74 | .613** |
| | 51+ years old | 10 | -.211 |

* p<.05 ** p<.01

### 6.3.4 ***Q4: Is OSA associated with loss of desire and sexual satisfaction?***

Desire and satisfaction were measured using a single item yes / no question from the NATSAL-SF survey producing nominal statistics for analysis (coded 0,1) which were then compared against the scaled OSA data to show if a soldier's sexual desire and satisfaction for their partners were linked to online sexual behaviour.

- Desire: yes / no question asking if participants have lacked interest in sex
- Satisfaction: yes / no question asking if participants have lacked enjoyment in sex

Results explained how OSA predicts the probability of soldiers experiencing loss of sexual desire in their sexual relationships.

## OSA and Loss of Desire

A logistic regression was performed to ascertain the effects of online sexual activity on the likelihood that participants would have low sexual desire. The null hypothesis was that OSA did not predict loss of desire. Results from the binary logistic regression demonstrated a coefficients p-value of 0.301 suggesting the model was not statistically robust for predicting effect on this association.

Table 48: *Summary of logistic regression analysis for OSA predicting loss of sexual desire*

| ***Outcome: Loss of sexual desire*** | | | | |
|---|---|---|---|---|
| | B | df | Sig. | Exp(B) 95% CI |
| Online sexual activity | 0.030 | 1 | 0.301 | 1.030 (.974-1.090) |

Results also signified that the confidence intervals passed through 1, also confirming that the model was not an accurate predictor. Therefore, OSA as a predictor for loss of desire was considered not significant and the null hypothesis that OSA does not impact on sexual desire was accepted.

## OSA and sexual satisfaction

Logistic regression was performed to compare the effects of online sexual activity on the likelihood that participants would lose their sense of sexual pleasure. The model did demonstrate statistical significance $p<0.001$.

Table 49: *Summary of logistic regression analysis for OSA predicting loss of sexual satisfaction*

| ***Outcome: Loss of sexual satisfaction*** | | | | |
|---|---|---|---|---|
| | B | df | Sig. | Exp(B) 95% CI |
| Online sexual activity | 0.96 | 1 | 0.01 | 1.101 (1.039-1.167) |

Odds ratios explained that OSA was a more robust predictor for group membership of declining sexual satisfaction than for sexual desire. For an addition point on the OSA scale, a soldier's likelihood of experiencing lower sexual satisfaction would increase by 10.1%. In relation to the research question, these results demonstrated that OSA was positively associated with loss of sexual satisfaction.

Further analysis looked at the effects of age, sex and relationship status on the likelihood that participants would have low sexual satisfaction. From these results, age (p = .05), added significantly to the prediction, but relationship status (p = .94) and sex (p = .27) did not. The model explained 8% of the variance in sexual satisfaction. Soldiers aged between 41-50 were 15.06 times more likely to report sexual dissatisfaction.

### 6.3.5 ***Q5: Is OSA associated with feelings of positive sexual partnering?***

This research question sought to understand whether online sexual behaviour had an impact on soldier relationships and feelings of intimate partner closeness.

The relationship between OSA and sexual partnership was statistically significant and considered to have a moderately low correlation, $r(306) = .21$ ($p<0.01$) when reviewing the total sample. Participants were only included in

sexual partnership if they had been engaging in sex, married or in a relationship in the last 12 months.

Table 50: *Correlation between OSA and sexual partnership*

| | | n | *r* |
|---|---|---|---|
| ***Total sample*** | | | |
| | Sexual partnership | 308 | .209** |
| *Sex* | | | |
| | Male | 285 | .219** |
| | Female | 23 | .189 |

**p<.01

Results are similar for male soldiers $r(318) = .22$ ($p<.01$). However, correlational analysis for female soldiers evidenced that for women, the relationship between online sexual behaviour and sexual partnering were not statistically significant and, in this study, cannot be proven.

### 6.3.6 ***Q6: Does living alone have a higher correlation with increased online sexual activity when compared to other living arrangements??***

Considering this research question in relation to the *Triple A* concept discussed in Chapter 2 this question sought to understand if soldiers were more isolated, were they more likely to act out sexually online (Cooper, 1998; de Alarcón et al., 2019). And if so, was that behaviour problematic. In 2017, 45% of soldiers were reported to live in single living accommodation (Brooke-Holland, 2017). With accommodation models changing over the last decade to offer more privacy, this research question was important to predict OSA behaviours in the future, categorised by living arrangements.

A one-way analysis of variance was conducted to compare the means of the independent groups classified by living arrangements to determine whether there was statistical evidence of significant difference. The null hypothesis suggested that there was no difference in the online sexual behaviours of soldiers based on their current living arrangements.

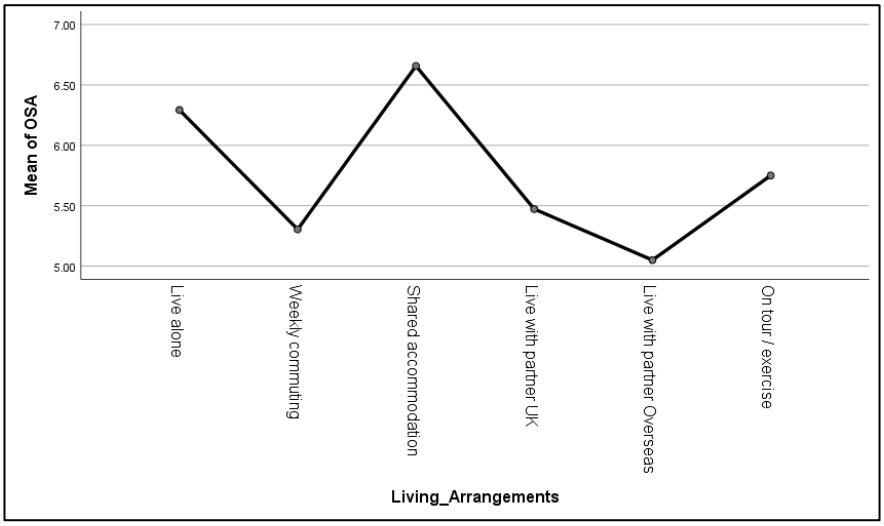
Table 51: *Coding for one-way ANOVA test for living arrangement correlation with OSA*

| Code | Living Arrangements |
|---|---|
| 0 | I live alone |
| 1 | I am weekly commuting |
| 2 | I live in shared accommodation |
| 3 | I live with my partner in the UK |
| 4 | I live with my partner overseas |
| 5 | I am currently on tour / exercise |
| Excluded | *Other (4 removed) |

Living arrangements were categorised into 6 groups; I live alone (M=6.29, SD=4.15, n=40), I am weekly commuting (M=5.30, SD=3.14, n=69), I live in shared accommodation (M=6.66, SD=4.90, n=35), I live with my partner in the UK (M=5.47, SD=5.48, n=146), I live with my partner overseas (M=5.05, SD=2.83, n=40) and I am on tour/exercise (M=5.75, SD=3.24, n=8).

Means plots and descriptive evidenced a difference in means by group demonstrating that living arrangements did have an impact on the average OSA behaviour (refer to Table 52). However, the assumption of homogeneity of variance was tested and found not to be tenable using Levene's Test F (5, 333) = 2.277, *p*=.47. Therefore, a key assumption of the data were not met. The data were skewed and not appropriate for parametric testing and a non-parametric test would have to be used.

Table 52: *Mean plots for OSA by living arrangements*




It is accepted that the ANOVA tests are still a robust measure of variance for non-normal data where there is a slight or moderate skew (Blanca, Alarcón, Arnau, Bono, & Bendayan, 2017). However, given the unequal number of participants in each group and the and unequal distribution of the data, a non-parametric Kurskal-Wallis test was considered an appropriate measure of rank within groups.

The Kurskal-Wallis test is used to compare two or more independent samples of equal or different sizes. It showed the variance between group by establishing if the medians of the groups are different. The test is not able to predict which groups are different, which can only be established by using a Posthoc test.

### 6.3.7 ***Non-parametric ANOVA***

A Kruskal-Wallis test showed that a soldier's living arrangements did not significantly affect their online behaviour. $H(5)=4.93$, $p=.425$. Table 53 explains that with a significance result of .425, there are no definable differences between the different types of living accommodation. Therefore, it was concluded that a soldiers' living arrangement did not impact on their current reported experience of OSA.

Table 53: *Independent samples Kruskal-Wallis test summary*

| | |
|---|---|
| Total N | 339 |
| Test statistic | 4.926 |
| Degree of freedom | 5 |
| Asymptotic Sig. (2-sided test) | .425 |

Multiple comparisons were not performed as the overall tests did not show significant differences across groups. These results are consistent with earlier demographic data that showed OSA means were not elevated for those soldiers who live alone (refer to Table 35). Other factors, such as being in shared accommodation or on tour were greater predictors of elevated online sexual activity. No groups were considered problematic for OSA within this study.

## 6.4 Conclusions of the phase 1 quantitative inquiry

The results demonstrated that reported stress levels, in the main, were above average but mostly classified as moderate. A number of key groups were identified as experiencing higher levels of problematic stress including those soldiers who live alone, individuals in a period of transition and female's over 40 years of age. Sexual functioning concerns were significantly higher than the national average whilst CSB and OSA were lower than published civilian norms. Table 54 explains key data from the Phase 1 results.

Table 54: *Results from Phase 1 data analysis in relation to the research questions*

| | ***Results from Phase 1 in relation to the research questions*** |
|---|---|
| ***IS STRESS CORRELATED WITH SEXUAL DIFFICULTIES?*** | Stress has a strong correlation with poor sexual functioning for British Army soldiers. This is both in terms of sexual difficulties and sexual partnership.<br>• A third of soldiers' self-report high levels of sexual difficulties which is more than civilian norms<br>• Females experience higher levels of sexual difficulties than men<br>• Separated soldiers report the highest levels of sexual difficulties<br>• Two thirds of British soldiers are moderately or highly stressed<br>• Soldiers who live alone demonstrate the highest stress levels |
| ***IS STRESS CORRELATED WITH ONLINE SEXUAL ACTIVITY (OSA)?*** | Stress was significantly correlated to OSA, however the strength of that association was low.<br>• Soldier problematic OSA is less than the general population<br>• Female soldiers report lower levels of online sexual activity<br>• Only 2% of soldiers are considered high-risk for damaging OSA<br>• 5% of soldiers admit to running across illegal sexual material online |
| ***IS ONLINE SEXUAL ACTIVITY CORRELATED WITH SEXUALLY COMPULSIVE BEHAVIOUR (CSB)?*** | The relationship between online sexual activity and sexually compulsive behaviour is statistically significant and strongly correlated.<br>• Those that scored high for OSA, were more at risk of developing CSB<br>• In general, CSB was low risk across the soldier cohort |

| | |
|---|---|
| | • Of the 6% of soldiers with high risk CSB, of those 100% were male |
| ***IS OSA CORRELATED WITH LOSS OF DESIRE AND SEXUAL SATISFACTION?*** | There is no proven link between OSA and loss of desire.<br>• 31% of male soldiers aged between 31-40 reported low libido<br>• For women, 70% of soldiers aged between 41-49 experienced loss of desire<br>Odds ratios explained that OSA was a more robust predictor for group membership of declining sexual satisfaction than for sexual desire<br>• For every one-point increase in problematic OSA, sexual dissatisfaction increased by 10.1%<br>• Male soldiers between 31-40 were most dissatisfied with their sex lives<br>• Female soldiers between 31-40 were 3 times more likely to experience sexual dissatisfaction compared to their civilian opposites |
| ***IS OSA CORRELATED WITH FEELINGS OF INTIMATE PARTNER CLOSENESS?*** | OSA and intimate partnership demonstrated a statistically significant relationship. The strength of that relationship is moderately low.<br>• Female soldiers engage in less OSA predicting lower levels of relationship disruption<br>• When stratifying the data, no significant relationship was found between OSA and partner closeness for female soldiers.<br>• Overall, OSA self-reported scores showed low levels of problematic sexual behaviour online across the sample population with 2% classified as high-risk |

| | |
|---|---|
| ***DOES LIVING ALONE HAVE A HIGHER CORRELATION WITH INCREASED ONLINE SEXUAL ACTIVITY WHEN COMPARED TO OTHER LIVING ARRANGEMENTS?*** | Analysis showed that living alone is not a predictor for increased OSA.<br>• Soldiers that lived alone demonstrated elevated stress levels but did not evidence higher OSA scores<br>• Of those soldiers living alone, 16% were measured as at-risk for problematic OSA<br>• Soldiers in shared accommodation had the highest levels of problematic OSA at 21.1% |

Phase 1 showed a positive correlation between stress and sexual functioning, suggesting that soldier stress may be manifesting itself in poor psychosexual response and intimate attachment. This was crucial information in starting to understand how stress impacts on sexual behaviour and whether soldiers are aware of the links between the two.

Correlations between stress and OSA and compulsive behaviour were not significant when comparing the total participant sample. With expectations of problematic online behaviour, this was a positive result and demonstrated low levels of distress concerning sexual compulsivity and maladaptive behaviours. Soldiers did evidence declining sexual satisfaction as their OSA behaviour increased but not a loss of desire.

Inquiries into the impact of living alone against other less isolating living arrangements gave no evidence that it influences OSA. Whilst the data showed difference in scoring, the results were not considered meaningful and there was no evidence that this data would be replicated in a larger sample.

The results were important to identify the at-risk categories to support Phase 3 of the data analysis which looked specifically at vulnerable soldiers in relation to the 7 main research question. The statistical analysis began to shape the picture of soldier experience regarding intimate relationships, stress and sexual behaviour. The next phase would add gravitas to these findings by offering context to the statistical results and depth to the findings.

## 6.5 Researcher reflections

Part way through my research, I was dicussing the progress of my study with a Professor at the University, when he asked me…

***'have you found your surprises yet?'***

It was some time before I fully understood his question.

The first *surprise* of this study sat firmly within the statistical analysis of the data. Within my own clinical pratice, I had worked with many soldiers whose online sexual behaviour had caused problems in their primary relationships. Whilst I had worked hard to protect my personal bias and hold nuetrality within this study, on reflection, I believe I had expected to see online sexual activity as problematic within this group of soldiers. I found being wrong an uncomfortable process.

The process of researching at doctoral level is a continous learning expereince, both on a personal level and an adademic one. It has exposed parts of my own process to be more linear than I expected and widened my frame of reference. As a sex therapist working with the military, I expected online sexual activity to be commonplace in this sample population so hoped this study could offer clearer insights into how much of this activity was causing disruption to soldiers' intradyadic sexual relationships. In reality, the data suggested that OSA was less prevalent in the Army than it was in the wider civilian population and was generally unproblematic.

I considered how I may have reacted if the first challenge to my thinking had not come within the statistical analysis. It was harder to argue with numbers, they were either statistically significant or they were not. I was extremely thankful for this learning so early in the data analysis, as it forced me to challenge my own thinking more and to stay loyal to the evidence regardless of my expectations. I concluded that I quite like surprises and relished the prospect of finding more as the study progressed.

# 7 PHASE 2: Qualitative Findings

*'I don't get home enough to shag my Mrs'*

## 7.1 Introduction

The overarching research question sought to understand if knowledge on sexual functioning quality could be used as an early indicator of declining personal wellbeing. Informed by the statistical results (Chapter 7), this section aims to analyse the stories of soldier experience. Participant data were analysed and coded to provide themes on both problematic and healthy stress responses, intradyadic relationships and occupational strain.

The qualitative element of this study comprised of 155 written responses in relation to the research subject area. Two questions were asked of participants at the final stage of the survey completion. These questions were not compulsory and were not word limited. As two open questions, they offered each participant space to talk about their personal experiences in relation to stress and sex.

*Questions:*

*Q.19 Is there anything else you would like to say about how stress impacts on you or your relationship?*

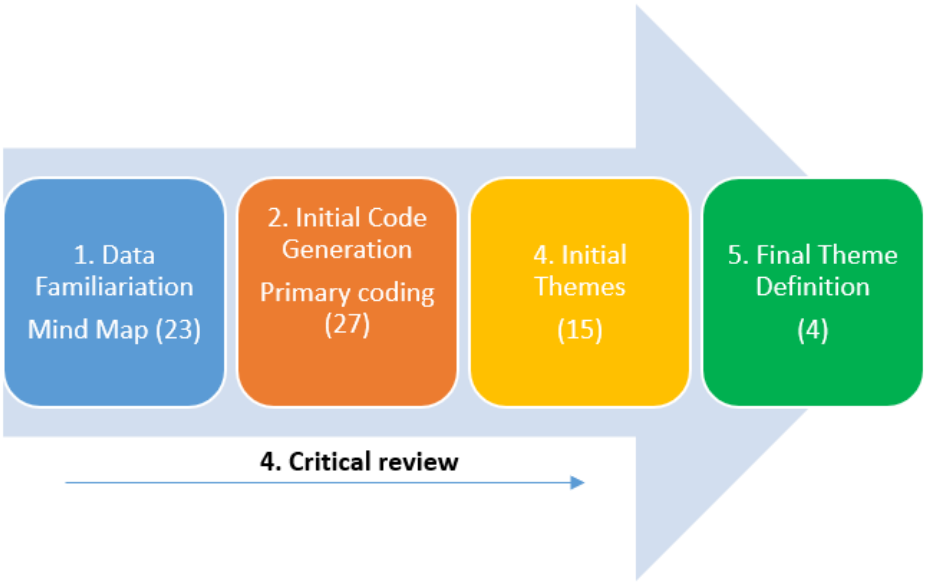
*Q.20 Is there anything else you would like to say about your sex life (good and bad)?*

The questions were reviewed in order to offer broader context to the statistical outcomes and support what began as a predominately quantitative inquiry. The number of responses exceeded expectations and provided key insights into the soldier experience and current mentality.

Considering the methodology of this research study (Chapter 5), reflexive Thematic Analysis (TA) provided the best fit when considering how to codify and make sense of the sizeable qualitative data produced by the respondents. In total, 93 participants answered question 19, and 62 responded to question 20, resulting in 155 personal stories of lived experience.

The TA approach (refer to Figure 17) involved a recursive method which helped to shape the final superordinate themes within the data. The data familiarisation initial mind-map created 23 codes across 3 categories. Following deeper data emersion and applying research knowledge this was expanded to 27 initial codes. Those codes were subsequently filed into 15 subordinate initial themes and were reviewed for more targeted foci, culminating in the generation of 4 superordinate final themes directly related to soldier behaviour and experience within this arena.

Figure 19: Findings of the thematic analysis distillation process



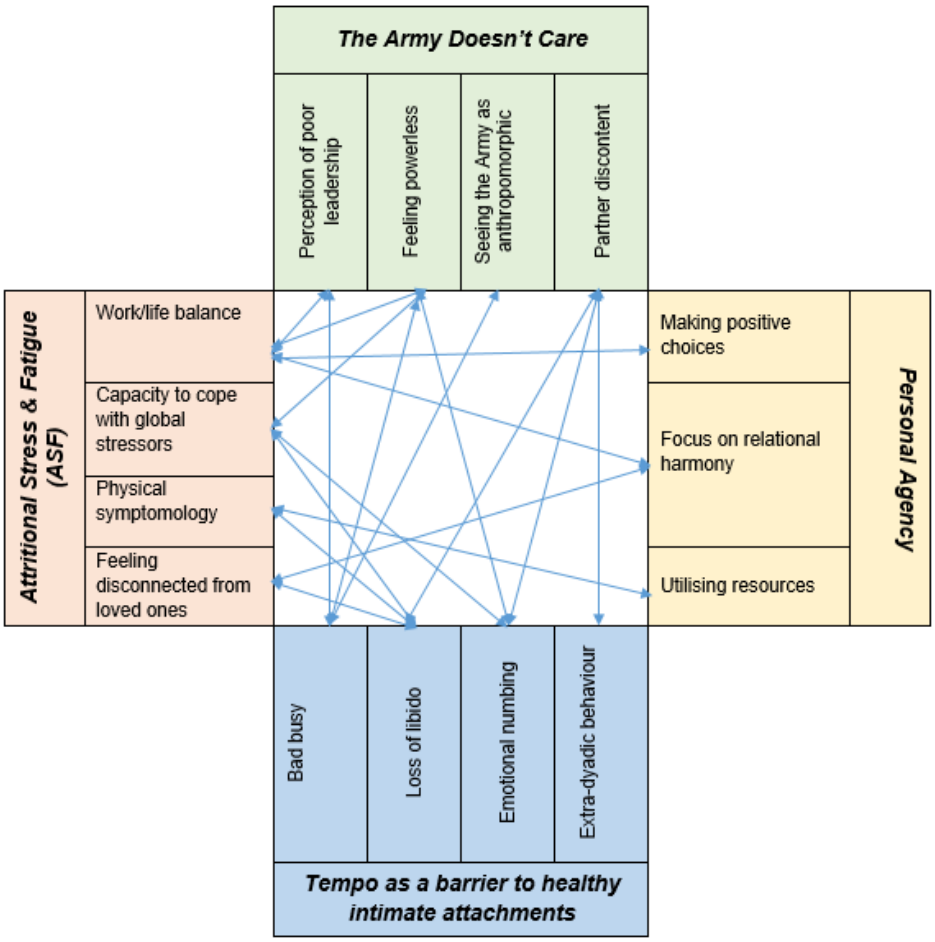

The final review elicited four final themes that became the superordinate themes:

- Attritional stress & fatigue (ASF)
- The Army doesn't care

- Personal agency
- Tempo as a barrier to healthy intimate attachments

Within the analysis, there were aspects of the participants responses that were interrelated across the 15 initial themes. Throughout the findings, these associations are highlighted to underline the commonality in soldier experience justifying the code generation and theme strategy.

Figure 20: Theme association matrix




### 7.1.1 ***Participant breakdown***

The initial analysis showed that among the 155 responses, there were a wide variety of personal experience, both in terms of stress and sexual behaviour.

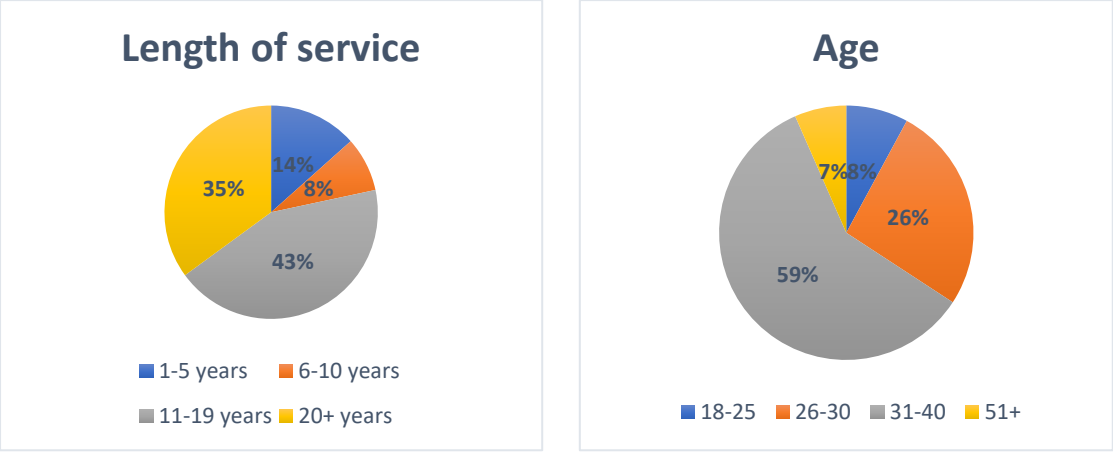
The 155 qualitative results were taken from 106 participants, some of which answered both questions.

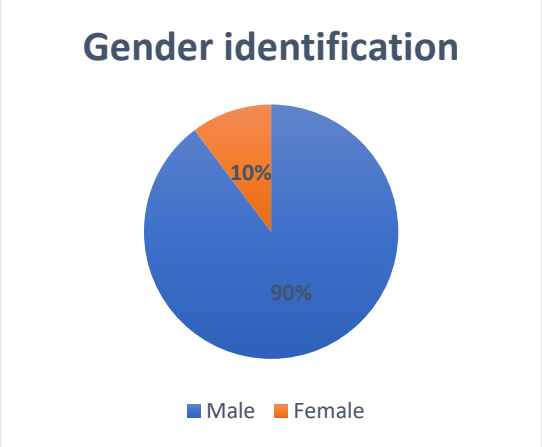
### 7.1.2 ***Demographics of qualitative data***

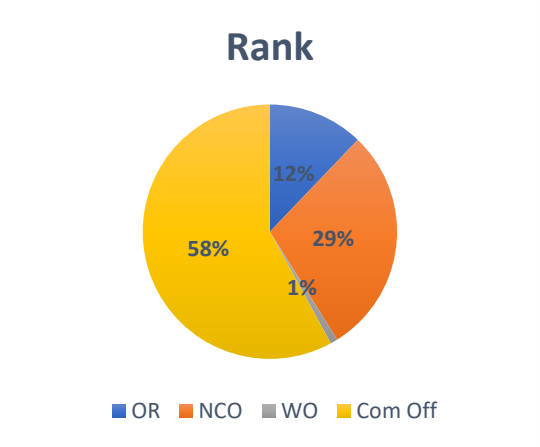
Participant demographics showed a large percentage of commentary came from soldiers serving over 11 years (78%) and aged 26-40 (75%). This could be purely down to computer access and time to complete the survey as higher ranks are more likely to have a workspace with online connectivity.

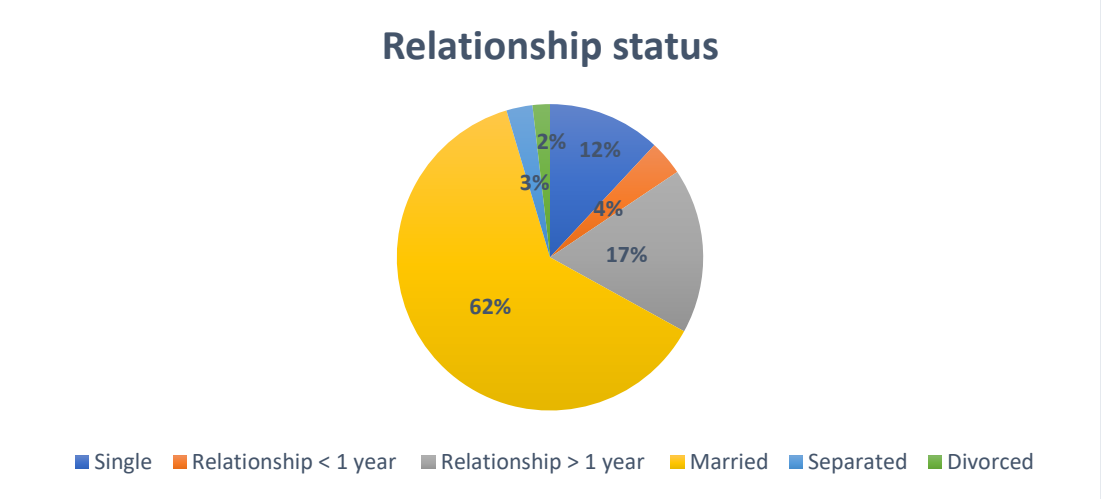
58% of participants were Commissioned Officers (n=62), with 29% Non-Commissioned Officers (n=31). Only 1 Warrant Officer elected to contribute which was unsurprising as they statistically scored the lowest levels of stress by rank. 62% of responses came from married soldiers (n=68), with only 5% from separated or divorced personnel (n=5).

Figure 21: Demographics of qualitative participants





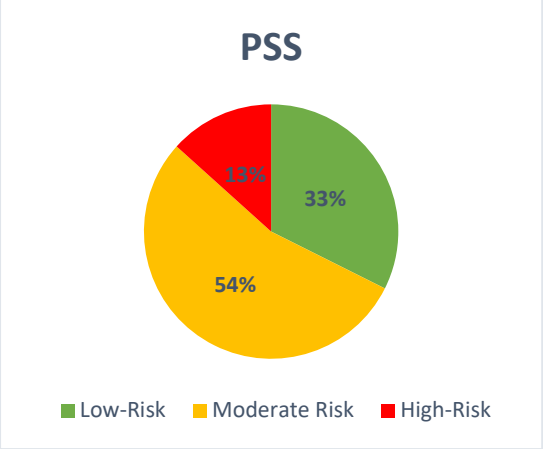



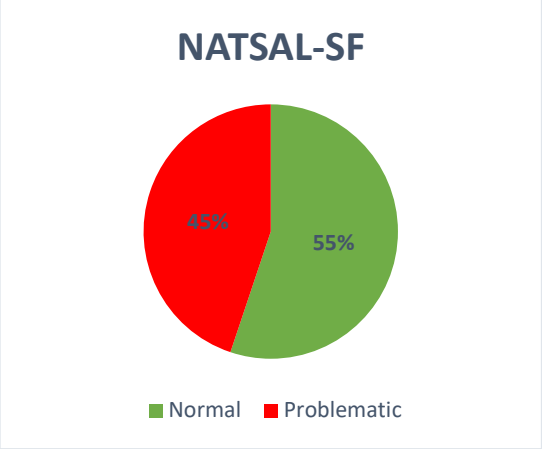

### 7.1.3 ***Participant scoring from the statistical analysis***

Looking specifically at those soldiers who contributed to the qualitative data, 33% scored as low-risk for stress, with 55% showing normal sexual functioning, 93% reporting low levels of sexual compulsion and 81% for low-risk online sexual behaviour (refer to Figure 22). High risk and problematic behaviour accounted for a small proportion of the PSS, SCS and ISST, scoring 13%, 7% and 4% respectively. At 45%, almost half of participants who engaged in the qualitative element of this study reported problematic sexual functioning with over half, 54% registering as moderate risk for stress.

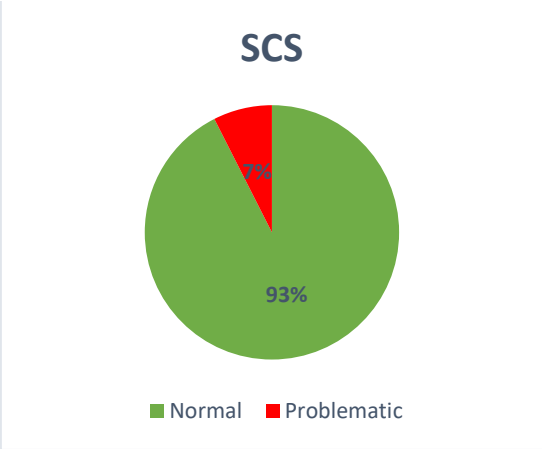
**Figure 22:** Breakdown of qualitative results by participant survey scoring



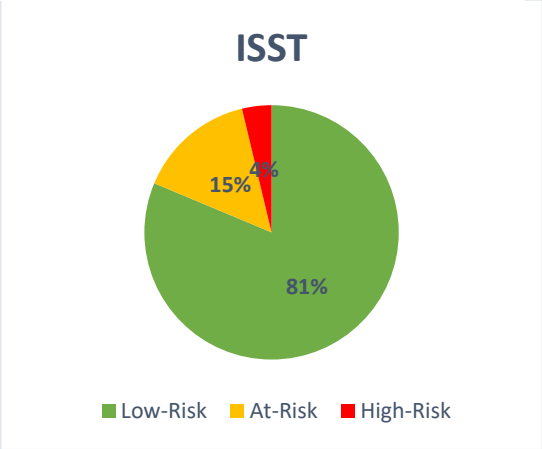

Perceived Stress Scale




NATSAL – Sexual Functioning




Sexual Compulsivity Scale




Internet Sex Screening Test

The broad spectrum of participant experience and instrument scoring alleviated any concern regarding self-selection bias and produced a helpful mix of both positive and negative qualitative responses for both the subject areas of stress and sex.

## 7.2 Key findings

Analysis of the data created 4 superordinate themes. The focus was to analyse the link between sexual functioning and problematic stress in a manner that could support psychoeducation and treatment outcomes to improve soldier wellbeing.

### *7.2.1* ***Researcher bias***

Whilst all of the study data were collected at the same time, this analysis was completed subsequently to the quantitative inquiry. Whilst the investigative lens was applied with the statistical results in mind, equal weight was applied to both inquiries. Independent context and meaning making was considered essential in order to support the main research question.

Hitchcock and Hughes (1995) asserted that research is born from assumptions claiming that different researchers may have varying assumptions regarding knowledge and truth. As with any qualitative inquiry, the findings offer many variations of interpretation. There is a recognition that the research will be viewed by a psychosexual specialist with ten years' experience of working with the military, which may have incurred bias based on which elements of the data stood out to me personally, as a clinician. Using a structured method of review, conscious attempts have been made not to draw on any clinical experience but to stay loyal to the data. Each coding exercise was reviewed and double checked against the commentary to ensure fidelity.

Commentary was however, viewed with a positive filter, searching for helpful results that would be beneficial to the soldier and the wider Army population. What were the participants saying, why were they saying it and how could this knowledge be used to support the current wellbeing infrastructure in order to reduce personal distress, damaged relationships and broken families? Researcher experience recognised that information of a sexual nature has potential social and political implications and therefore this study is conscious of its ethical and moral duty to the individuals and the whole UK Defence

community. Evidence has been respectfully reviewed and only messages and themes that support positive change have been pursued.

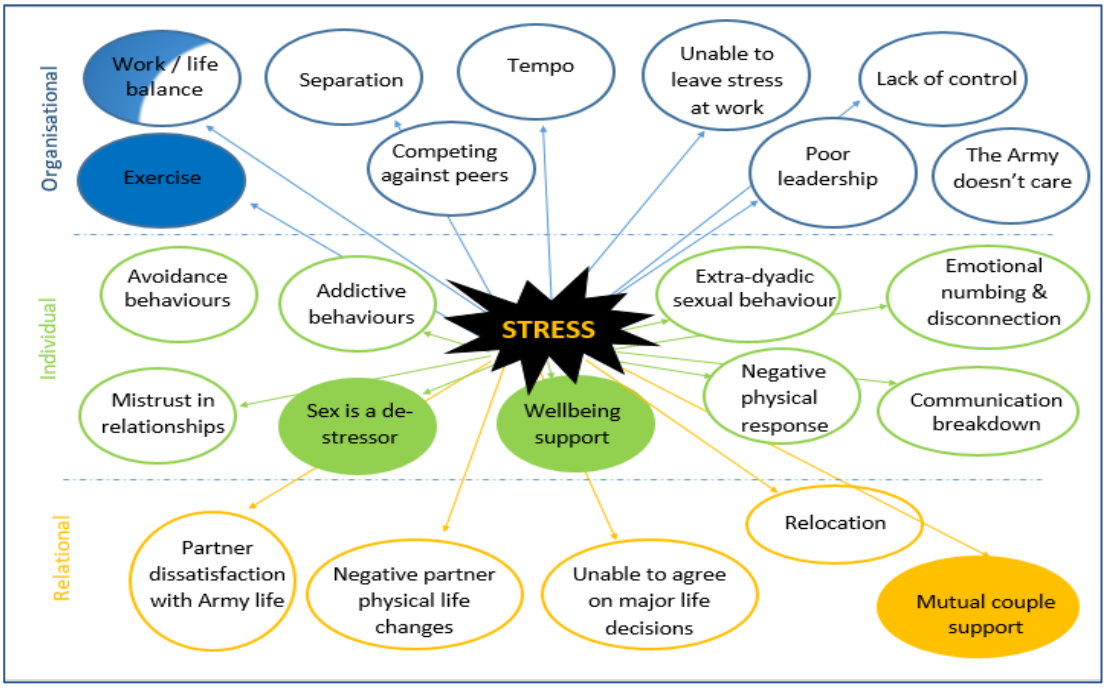
Expectations versus the findings will be reviewed in more detail within the study Discussion, in Chapter 11.

### 7.2.2 ***Data familiarisation***

No responses raised any ethical concerns, nor did the analysis unearth any answers that could be considered as intentionally disrupting to the research (no puerility related to sex, for example). The ethics process raised a concern that soldiers may talk about illegal sexual behaviour which may require action, or that soldiers may use the open questioning on sex for their own amusement. This did not happen and therefore all responses were included in the analysis.

Findings from the initial data review created a mind-map of potential codes within the data. Positive subjects were represented by filled boxes, showing that in each category there were stories that spoke of the successful balance of stress and intimate contentment. Work / life balance was the only theme where it was considered both a positive and negative issue. This is highlighted by the split fill.

Figure 23: Data familiarisation mind map



The data familiarisation and mind-map categorisation produced 23 different possible codes. For the purpose of this early analysis, codes within the mind-map were sectioned within three main areas, *Organisational, Individual and Relational.*

### 7.2.3 ***Initial code generation***

Following the initial mind-map coding, subsequent review of the data highlighted a total of 27 initial codes directly related to soldier experience. This led to creation of 15 subordinate themes that best described the participant commentaries; ranging from physical symptomology to partner / spousal discontent. Table 55 showed how the 27 were reduced to 24 with the 4 final superordinate themes identified as key contributors to providing knowledge of what directly impacts a soldier's stress and sex experience.

Table 55: *Distillation from initial codes to superordinate themes matrix*

| Serial | Initial Code | Initial Themes (Subordinate Themes) | Final Themes (Superordinate Themes) |
|---|---|---|---|
| 1<br>2 | Work life balance – Not coping<br>Work life balance – Coping | Work/life balance | **Theme 1**<br>**Attritional stress & fatigue (ASF)** |
| 3 | Unable to leave stress at work | Capacity to cope with global stressors | |
| 4<br>5<br>6 | Physical distress symptoms<br>Negative physical injury or symptoms<br>Fatigue | Physical symptomology | |
| 7 | Separation | Feeling disconnected from loved ones | |
| 8 | Perception of poor leadership | Perception of poor leadership | **Theme 2**<br>**The Army doesn't care** |
| 9<br>10 | Lack of control<br>The Army doesn't care | Feeling powerless | |

| | | | |
|---|---|---|---|
| | | | |
| 11 | Partner dissatisfaction / issues | Partner / spousal discontent | |
| 12<br>13 | Taking positive control<br>Using humour as a defence/coping strategy | Making positive choices | **Theme 3**<br>**Personal agency** |
| 14<br>15 | Robust couple relationship<br>Sex as a positive de-stressor, contributor to psychological wellbeing and relational quality | Focus on relational quality | |
| 16 | Able to agree on major life decisions | Future planning | |
| 17<br>18 | Welfare support<br>Exercise | Utilising resources | |
| 19 | Tempo | Bad busy | **Theme 4**<br>**Tempo as a barrier to healthy attachments** |
| 20 | Loss of desire | Loss of libido | |
| 21<br>22 | Emotional numbing & disconnection<br>Mistrust in relationship | Emotional numbing | |
| 23<br>24 | Addictive/ avoidant behaviours<br>Extra-dyadic behaviour | Extra-dyadic behaviour | |
| 25 | Post-Operation symptoms | Removed due to low representation | Removed due to low representation |
| 26 | Competing against peers | Removed due to low representation | |
| 27 | Societal considerations | Removed due to low representation | |

This remainder of this chapter will review the data by final theme category (superordinate) analysing the themes derived from the data. Any full comments have been referenced by their Unique Response Number [URN].

## 7.3 Theme 1: Attritional Stress & Fatigue (ASF)

Evidence from this study demonstrated that routine occupational stress coupled with external global pressures outside of the Army, had an attritional stress effect. Those participants trying to juggle multiple demands commented on physical symptoms, malaise, sexual difficulties and emotional disconnection. With over 54 responses (35% of total responses) referring to global pressures in some way, it was collectively defined as Attritional Stress & Fatigue (ASF).

ASF specifically refers to the accumulative effect of managing multiple external demands that become detrimental to mental health, physical wellbeing and healthy relationships. This does not relate specifically to sexual difficulties as that is addressed in Theme 4 (Tempo as a barrier to intimate attachments). ASF encapsulates a more general inability to cope.

With 4 subordinate themes, findings showed significant evidence of work/life balance concerns, a declining ability to manage global stressors, physical symptomology and a range of isolating behaviours, including forced separation due to military commitments.

Table 56: *Quotations linked to Attritional Stress and Fatigue (ASF)*

| Superordinate Theme | Subordinate Themes | Pertinent Quotations |
|---|---|---|
| *Attritional Stress & Fatigue (ASF)* | *Work / Life Balance* | *Impossible to balance work and life*<br>*Military impacts massively…*<br>*I have very stressful days*<br>*Military also seems to cause a lot of stress with its unpredictability*<br>*Busy-ness / tiredness and being away a lot is an issue*<br>*On my time off still work pop's up never ending* |

*A better work life balance would reap dividends in my opinion*

*The stress levels within the modern military are extreme*

*…disconnecting from work*

*The military is a high stress environment*

*I am up at 0530 every morning and do not stop all day. I have a vast job to cover (both geographically and responsibilities) and have never managed to be on top of things*

*I and my partner often have to work later than planned to deal with work stress levels*

*Work is stressful…*

*Difficult spending time at home /disconnecting from work. Impossible to balance work and life*

*Sometimes if it's been a stressful or hard day at work, I carry that frustration home with me*

*I feel the Army and the demands of the job/lifestyle has a largely negative impact on my personal life and relationship*

*My partner also serves and we often bring work related stress home with us*

*A better work life balance would reap dividends in my opinion*

*I feel it is no longer possible to leave work behind when returning home and thus the frustrations on your mind continue*

*Stress at work can lead to stress at home*

*I have no doubt my work life balance, or lack thereof was the cause of… [my relationship breakdown]*

*I suffer from a stressful work life, therefore it interrupts my relationship with my husband as I cannot switch off after work.*

| | |
|---|---|
| | *Work related stress or just being tied or fatigued …* |
| | *I commute a long distance at weekends and after a tiring week would rather remain at my workplace and not go home for the weekend* |
| *Capacity to cope with global stressors* | *I have that much of a work load that I am not interested…. there is no real reason just I am too tired and thinking about the tasks that I will have to complete tomorrow* |
| | *The military consumes your life and when you live in the block as a singly there is no way to get away from the issues and problems of work as you are on camp living breathing it* |
| | *it puts strain on my relationship since having children, my partner doesn't show she is stressed, looking after our child/running a home/and working full time, but I know she is stressed* |
| | *Army and the demands of the job/lifestyle has a largely negative impact on my personal life* |
| | *Daily stressors (work, children, commute) can affect the relationship* |
| | *We are both in high stress occupations which have a negative impact on our ability to tear ourselves away from work In addition to juggling family commitments and the fact that my civilian partner works long hours and weekends means neither of us have the energy…* |
| | *When we both bring our stresses home with us, it is easy to ignore the other person's indicators and warnings that they are stressed, because you focus so much on your own. This in turn can create an uncomfortable living environment, which in turn leads to bickering and arguments* |
| | *The stress of work and wanting to have a child hugely impacts...* |

| | |
|---|---|
| | *… this in turn causes performance anxiety* |
| | *I can remember not having the energy or wish to sleep with my wife due to stress and exhaustion from work* |
| | *Stress often means working late and being fatigued* |
| | *I am too tired…* |
| | *Unable to get out of bed at a time I wish to. It feels like the duvet is a heavy weight* |
| | *Lack of appetite* |
| | *Stress has made me very tired* |
| | *To stressed from work to want to have sex because I'm too tired when I get home* |
| *Physical symptomology* | *My sleep and sex life has suffered somewhat due to the stress of being in the Army* |
| | *…that have disrupted sleep and impacted on my sex life* |
| | *Just sleeping patterns due to stress or unable to get a full night's sleep which can keep my partner awake* |
| | *…needing time to de-stress and relax after work my sleep pattern totally disrupted and does not correlate with my spouses* |
| | *I can remember not having the energy or wish to sleep with my wife due to stress and exhaustion from work* |
| | *Increased stress and lack of family time has impacted on my sex life* |
| | *The last minute changes of plans and the number of weekends taken up with by work whether on exercise or duty* |

| | |
|---|---|
| | *In my situation, this is amplified by the weekly commuting effect* |
| | *Biggest strain on relationships as the distance from home/partner can be too much* |
| | *I do not know anyone in the entire Army who can tell me where they will be on a certain day in two years' time. Imagine being married to someone who gets treated like that all the time?* |
| | *The workload and time away from friends and family has had a direct impact on my relationships* |
| *Feeling disconnected from loved ones* | *The inability to be at home with a girlfriend each night has cost me relationships* |
| | *The location of work has had a direct impact on my ability to form any new relationships* |
| | *Working away means that communication between us is also stilted at times and we are always readjusting to being around each other again* |
| | *The demands of working away all week and then coming home only at weekends are a real challenge on any relationship* |
| | *…my sex life is clearly impacted from long periods of time away from my partner.* |
| | *My military service causes long periods of separation from my wife…* |
| | *Weekly commuting puts added pressure* |
| | *The workload and time away from friends and family has had a direct impact on my relationships* |
| | *The inability to be at home with a girlfriend each night has cost me relationships* |
| | *I spent a lot of time away over my career and single for several years especially during tours of Afghanistan* |
| | *…the military also seems to cause a lot of stress with its unpredictability* |

### 7.3.1 ***Work / Life balance***

Work/life balance and tempo remain the most sizable areas of conversation within this study. Individuals report excessive stress levels which contributed to negative relationship experiences, resulting in emotional numbing and sexual difficulties.

*'Difficult spending time at home/disconnecting from work. Impossible to balance work and life'* *[304517-304509-40732441]*

Together with Tempo and seeing the Army as anthropomorphic, this subject was one of the 3 the most prolific subordinate themes in terms of study response and vocalised tension of marital discord. Participants discussed the difficulties of meeting work commitments whilst maintaining healthy relationships at home.

*'I suffer from a highly stressful work life, therefore it interrupts my relationship with my husband as I cannot switch off after work. I often find myself taking it out on him, this in turn causes an argument thus turning me off the idea of sex'* *[304517-304509-43521817]*

Discussing an inability to switch off or to leave work at the office, was considered a contributor to mounting stressors. Soldiers get paid a daily rate on the basis that they are expected to be available at all times. This constantly 'being available' was also considered a factor that contributed to poor or unhealthy work / life balance.

*'it [The Army] only focuses on work and this includes a potential 24 hr callout (phone / social media or physically called out). I feel it is no longer possible to leave work behind when returning home and thus the frustrations on your mind continue and therefore impact directly on the sexual relations you would normally have with your partner as well as the family relations you enjoy with your wider family'* *[304517-304509-43188665]*

### 7.3.2 ***Capacity to cope with global stressors***

Serving in the military creates unique stressors (Jones et al., 2012; MacManus et al., 2014). Coupled with the needs of their romantic partners, supporting an unpredictable and challenging lifestyle (Keeling et al., 2015; Segal, 1986), there can be systemic pressures applied to the soldier. Soldiers talked in detail about combined pressure and trying to juggle global demands.

*'My wife and I are both in stressful professional jobs. When we both bring our stresses home with us….This in turn can create an uncomfortable living environment, which in turn leads to bickering and arguments. ….. Bigger, sensitive subjects (money, childcare, property etc...) are ripe for disagreement and conflict and if there is no respite from this it, again, adds to friction filled relationship, and again, a lack of sexual appetite towards each other'* *[304517-304509-41331909]*

Participants did not specifically mention the stress their partners or families place on them. This could be because they were not specifically asked about this within the context of the survey. However, they did discuss how marital

disharmony is created due to the demands of the job and the frustration of not being able to meet the needs of their intradyadic relationships. Along with high scores for problematic sexual functioning in this group, there was a sense that meeting the demands of work and creating healthy physical bonds was proving difficult for many.

*'The demands and responsibilities placed upon me and the hours I am forced to work is making my marriage increasingly stressful. My wife has mentioned frequently in the last 12-18 months about getting divorced which I sincerely hope does not happen' [304517-304509-41331909]*

Evidence within the statistical analysis showed that soldiers who are deployed and therefore only have one priority are less stressed that those working in-barracks. This was mirrored in the qualitative commentaries where managing the demands of the family as well as the demands of the job appeared to be increasingly difficult. In many cases, soldiers felt the pressure of varying aspects of their lives. Whether that was financial, children, life stages or pressures at work. This had a measurable impact on their ability to be intimate with their partners.

*'We did have a much healthier sexual relationship including experimentation but it seems that time, age, busy jobs, children, working away, "real world issues" such as mortgages, bills, car insurance etc etc has seen this fade. This is very frustrating as it is something I would like to explore again'* [304517-304509-41166451]

*'Sometimes I don't feel emotionally connected to my boyfriend during sex, I believe this is because of the stress that I am experiencing, for example financial worries, stress from work and stress of being pregnant'* [304517-304509-41406490]

### 7.3.3 ***Physical symptomology***

As an umbrella term for global stress that is detrimental to emotional, cognitive and physical functioning, ASF was also demonstrated in the data by participants offering information regarding their physical distress symptoms. This included exhaustion or difficulty sleeping.

*'Often I feel pessimistic about my career and future due to the pressure the Army puts on me and how much it penetrates into my personal life. 'My sleep and sex life has suffered somewhat due to the stress of being in the Army'* *[304517-304509-41200608]*

*'Just sleeping patterns due to stress or unable to get a full night's sleep which can keep my partner awake'* *[304517-304509-43313408]*

There is further suggestion that the unsociable hours and unpredictability of Army life impacts on stress, relationships as well as sleep general sleep hygiene. Given the latest figures by The Sleep Council, there is recognition that sleep deprivation can have a significant impact on physical functioning and related health concerns (Perelman, 2018; The Sleep Council, 2017) and can impede operational performance (Harvey, 1999) . The prevalence of comorbid physical symptomology was closely linked to personal and relationship strain.

*'The stress of long hours, undermanning and constantly being asked to do more with less has had a direct and significant impact upon my sex life with my spouse. Due to getting home later, needing*

*'My sleep and sex life has suffered somewhat due to the stress of being in the Army. I believe at the crux of it all is lip-service to the welfare of individuals, when in-fact, the organisation and those in command care little as long as jobs are getting done' [304517-304509-41200608]*

Lack of sleep and feeling fatigued were the main discussion points for soldiers alongside the physical change in sexual desire. There was a sense that soldiers recognised that their work and / or familial pressures were contributing to fractures in emotional and intimate attachment. A recurring story of aggravation and sadness accompanied the stories of failing relationships.

### 7.3.4 ***Disconnection***

For this inquiry, disconnection explored the feelings of isolation, separation and geographical distance amongst the participants. There were threads through many of the themes that touched on working away, wanting to be home more and feeling disconnected from their partners.

*'No control of base/unit location is the biggest strain on relationships as the distance from home/partner can be too much' [304517-304509-40734483]*

*'As well as the last minute changes of plans and the number of weekends taken up with by work whether on exercise or duty and the location of work has had a direct impact on my ability to form any new relationships as it is often several weeks before I am able to go back and see someone from the last time we met which deters people from wanting to start a relationship'* *[304517-304509-40607194]*

### 7.3.5 ***Theme summary***

As a theme, ASF describes the mounting pressure that soldiers feel when they are trying to juggle multiple demands on their personal resources. Not just limited to work strain; it reflects the personal capacity to juggle occupational commitments alongside the needs of the family, finances, and intimate relationships.

In periods of low-intensity conflict, ASF is a serious threat to soldier wellbeing and its impact on relationships is a clear marker for failing resilience. Experience of ASF is prevalent in the data and demonstrated a physical and emotional decline, specifically within the context of healthy attachment.

## 7.4 Theme 2: The army does not care

This theme reflected the negative soldier perception of the senior management in the Military. The Army was discussed as an entity in itself which causes unnecessary pressure without concern for the psychological health of the individual or the relationship.

*The Army does not care* stood out as a major theme and was well evidenced in the data. Whilst the theme title implies a negative premise, it could be argued that this perception could be a key area for education and positive change. With four subordinate themes, this category evoked the most emotion and tabled widespread discontent with the current perceptions of institutionalised Army life.

This category included the most vociferous comments.

Table 57: *Quotations linked to The Army Doesn't Care*

| Superordinate Theme | Subordinate Themes | Pertinent Quotations |
|---|---|---|
| *The Army doesn't care* | *Perception of poor leadership* | *The military is more stressful than most careers and a lot of the time the stress is unnecessary*<br>*Management in the army is utterly dreadful…*<br>*Also the large periods of inactivity have a big effect on mental health*<br>*There has been an improvement since a change of personnel at my unit which has seen an overall improvement in morale (unit wide)*<br>*My life is only stressful when I go into work, the management are a joke*<br>*People need to realise it's the top shelf or higher Management that fail to listen to others which impacts us all. Even when they think they are right 95% of the time they are wrong but are to arrogant to listen*<br>*A change of job rectified these issues.*<br>*Stress impacts on relationships as there is too little correct and timely passage of information from higher formations, which sets up an organisation for failure*<br>*By not adhering to the principles of battle procedure, and not being in a better position to forward plan, we are manifesting more unnecessary stresses to the work I also strongly agree with the fact that on paper it looks like everything is working fine and it can be hard to understand why soldiers feel the way I do* |

| | |
|---|---|
| | *currently, but the truth is it is far from fine being on the bottom ground* |
| | *The Army failing to look after its troops. Over working them and running them in to the ground* |
| | *I don't feel the CoC supports the emotional wellbeing of its Soldiers and Officers. Often I feel pessimistic about my career and future due to the pressure the Army puts on me and how much it* |
| | *Being in the Army. I believe at the crux of it all is lip-service to the welfare of individuals, when in-fact, the organisation and those in command care little as long as jobs are getting done* |
| | *The stress in mine and many other people's lives comes from work. Underpaid and over stretched due to lack of man-power.. Nobody wants to join the Army anymore because they don't do enough to retain the soldiers already serving* |
| | *The military is more stressful than most careers and a lot of the time the stress is unnecessary* |
| | *Military also seems to cause a lot of stress with its unpredictability* |
| | *Last minute changes of plans…* |
| | *No control…* |
| | *It could be reduced significantly if commanders would finally say "NO" to higher comds.* |
| *Feeling powerless* | *There are too many commitments for our available manpower and the Army cannot say no* |
| | *The stress in mine and many other people's lives comes from work. Underpaid and over stretched due to lack of man-power* |
| | *Nobody wants to join the Army anymore because they don't do enough to retain the soldiers already serving* |

*It used to focus on family Vs work; now it only focuses on work and this includes a potential 24 hr callout (phone / social media or physically called out).*

*I feel it is no longer possible to leave work behind when returning home*

*We are always overworked (too many tasks - not enough people)*

*Senior officers or NCOs who have a pretty poor man management approach and use their rank to bully, cajole and get what they want.*

*The demands and responsibilities placed upon me and the hours I am forced to work is making my marriage increasingly stressful.*

*The stress of long hours, undermanning and constantly being asked to do more with less has had a direct and significant impact upon my sex life with my spouse.*

*The military doesn't care about anyone's sex life/anxiety/depression/stress/mental wellbeing*

*The Army failing to look after its troops. Over working them and running them in to the ground*

*The Army doesn't care about family life even though it says it does.*

*There is little compassion within the military, only product and output*

*She tends to blame any issues she has on 'The Army' and my conduct.*

*…the Army cannot say no*

*The stresses of the army affect my relationships*

| | |
|---|---|
| *Seeing the Army as anthropomorphic* | *The Army and the demands of the job/lifestyle has a largely negative impact on my personal life and relationship*<br>*The Army failing to look after its troops…*<br>*…due to the pressure the Army puts on me* |
| *Partner / spousal discontent* | *I do not know anyone in the entire Army who can tell me where they will be on a certain day in two years' time. Imagine being married to someone who gets treated like that all the time?*<br>*My partner also serves and we often bring work related stress home with us*<br>*…but I feel as though management in the army is utterly dreadful, where it affects my partner far more than it needs to be,*<br>*My spouse has issues relating to her time in the service (physical injuries) that can prevent intimacy. I feel like these were totally disregarded when my spouse left the service, even though the injuries were caused by her service*<br>*My wife has mentioned frequently in the last 12-18 months about getting divorced which I sincerely hope does not happen*<br>*I found out recently that the stresses of the army affect my relationships as my long term relationship broke down because of the added stress. It doesn't just affect a soldier but it affects the persons partner too, more than anyone cares to realise*<br>*She tends to blame any issues she has on 'The Army' and my conduct*<br>*Stress of the serving person is often less than that of the spouse, if i work 17 hour days for weeks on end I don't feel stressed about it as it is my job, however* |

| | |
|---|---|
| | *my wife who is stuck at home feels very stressed about it*<br><br>*Army life is harder for the spouse.*<br><br>*The spouse is the one dealing with life's problems differently (from the point of view of a civilian, at times in a different country, secondary to the needs of the serving person*<br><br>*At the start of my relationship it was exciting that I worked away, but now it puts strain on my relationship*<br><br>*My wife however is very affected by stress and her mood and sexual appetite can be directly attributed to any problems she is having in her life. Going grey at an early age. has been a few time when divorce has been near* |

### 7.4.1 ***Perception of poor leadership***

Feelings of dissatisfaction and loss of trust in an organisation can create toxic morale (Schirmer, 2008). Within this study, organisational blame for individual or partner discontentment chiefly fell on 'The Army' or higher management structures, but not on the individual Commanders.

> *'People need to realise it's the top shelf or higher Management that fail to listen to others which impacts us all. Even when they think they are right 95% of the time they are wrong but are too arrogant to listen' [304517-304509-40736833]*

> *'I don't feel the Chain of Command supports the emotional wellbeing of its Soldiers and Officers. Often I feel pessimistic about my career and future due to the pressure the Army puts on me and how much it penetrates into my personal life' [304517-304509-41200608]*

> *'Stress impacts on relationships as there is too little correct and timely passage of information from higher formations, which sets up an organisation for failure' [304517-304509-40739529]*

Whilst there is evidence that good leadership improves cohesion and morale and lowers risk for general mental health concerns (Jones et al., 2012; MacManus et al., 2014), this theme offers the mirror of that view, that the perception of not being valued can cause needless stress and discontentment.

Offering participant anonymity allowed for deeper vexations to be heard. There were trends in the data regarding strength of voice with those soldiers considered to be transitioning, either beginning or ending their career, as more forceful in their remarks. All showed either elevated stress levels or problematic sexual functioning.

*'My life is only stressful when I go into work, the management are a joke.* *[304517-304509-40736833]*

*'I feel as though management in the army is utterly dreadful'* *[304517-304509-40782930]*

*'We constantly compete with our peers for promotion, we are always overworked (too many tasks - not enough people), Sqn/Regt/Station duties, last minute trawls, attending career courses, running extra-curricular activities on top of our daily work load. We have to contend with senior officers or NCOs who have a pretty poor man management approach and use their rank to bully, cajole and get what they want'* *[304517-304509-43264262]*

### 7.4.2 ***Feeling powerless***

There was an implicit rise in participant frustration when discussing areas of feeling powerless. Change in language and tone suggested elevated distress and affront.

*'the hours I am **forced** to work' [304517-304509-40738077]*

*'I do not know anyone in the entire Army who can tell me where they will be on a certain day in two years' time. Imagine being married to someone who gets **treated like that** all the time?' [304517-304509-40759901]*

These personal accounts represent a sense of low morale which is apparent across this study in terms of frustration and strain. Soldiers explain how they perceive their own personal pressures, which for this group is rooted in a sense of being powerless. For some, they have lost their sense of personal governance and control, which appears to have removed the broader sense of being part of something bigger. Soldiers articulate an impression of things being done to them of which they have no say.

*'Stress and the **inability to control** simple aspects of my personal life due to the many rules and regulations that make up the Army, have a **massive impact** on my personal life' [304517-304509-40864185]*

### 7.4.3 ***Seeing the Army as anthropomorphic***

Analysis picked up on a general theme of feeling tired and unappreciated. However, in every negative response, that disgruntlement was aimed solely at the Army itself.

*'**The Army** doesn't care about family life even though it says it does.' [304517-304509-40738077]*

*'**The Army** failing to look after its troops. Over working them and running them in to the ground' [304517-304509-41252644]*

*'She tends to blame any issues she has on **'The Army'** [304517-304509-41724932]*

The Army as a singular entity represents a misnomer, a belief that is potentially creating damaging organisational perceptions. *The Army* is not anthropomorphic, it does not make decisions and cannot be solely responsible for its impact on each soldier. The Army is an organisation made up of individuals, all of which hold a combined responsibility for each other.

In this study, The Army, as an entity, was mostly framed in a negative perspective which appeared in the data with an edge of despondency. Linked closely with the previous subordinate theme of feeling powerless, participants spoke with dissatisfaction and frustration.

*'**The Army** cannot say no.' [304517-304509-44518419]*

*'I feel **the Army** and the demands of the job/lifestyle has a largely negative impact on my personal life' [304517-304509-41200608]*

There was some evidence in the data that focused on specific roles or working environment, indicating that a change of job or personnel could directly impact stress, psychological wellbeing and healthy attachment; implying that it is not the institution as a whole that is problematic, responsibility could lie with individual Commanders and their management approach.

*'There has been an improvement since a change of personnel at my unit which has seen an overall improvement in morale (unit wide), which I was surprised had a positive effect on my performance!' [304517-304509-40721018]*

*'I have no doubt my work life balance, or lack thereof was the cause of this scenario as a change of job rectified these issues.' [304517-304509-41340235]*

### 7.4.4 ***Partner / spousal discontent***

Within this study, partner or spousal contentment was not specifically measured in terms of the stress experience of soldiers. In this theme, partner discontent is within the context of not being valued by the Army or not having partner or family needs considered in terms of occupational requirements.

*'Stress of the serving person is often less than that of the spouse, if I work 17 hour days for weeks on end I don't feel stressed about it as it is my job, however my wife who is stuck at home feels very stressed about it'* *[304517-304509-40720104]*

*'At the start of my relationship it was exciting that I worked away, but now it puts strain on my relationship since having children, my partner doesn't show she is stressed, looking after our child/running a home/and working full time, but I know she is stressed. I doubt I'm the only one in the military that feels this way'* *[304517-304509-41164610]*

It was widely accepted that in times of conflict, separation and high workload is necessary. This investigation showed was a sense of irritation that some of the additional pressure places on them as a couple were needless and preventable.

*'The military is more stressful than most careers and a lot of the time the stress is unnecessary'* *[304517-304509-41187142]*

*'…obviously of course this is the military and that is expected but I feel as though management in the army is utterly dreadful, where it affects my partner far more than it needs to be' [304517-304509-40782930]*

### 7.4.5 ***Theme summary***

The perception that the Army does not care encompasses a general feeling of being personally undervalued. Covering the opinion that leadership does not adequately listen or understand soldier experience, it creates a negative sense of being powerless. Blame appears to sit with the Army as an entity creating a them and us unhelpful scenario.

Coupled with spousal discontent, this theme could offer some valuable insights to support training and education in leadership and the influence of institutional perception on soldiers' mental health.

## 7.5 Theme 3: Personal agency

Higher personal agency correlated with increased wellbeing. Those soldiers who felt more in control of their lives, particularly curving their thinking around the immediate experience of the Army, were more content. Based on the ideology of Bandura (1977) personal agency refers to a people's beliefs in their capability to exercise control over their own functioning and over environmental events.

Direct associated with self-efficacy, participant experience displayed positive cognitive, emotional and behavioural motivations. Control can provide individuals with greater clarity for decision making, resource response and personal fulfilment (Harvey, 1999). Soldiers that managed their stress through exercise, making time for themselves or their relationships, had lower stress levels and a better perception of military life.

Table 58: *Quotations linked to Personal Agency*

| Superordinate Theme | Subordinate Themes | Pertinent Quotations |
|---|---|---|
| *Personal Agency* | *Making positive choices* | *Commitment to my work life* |
| | | *This is the military and that is expected* |
| | | *Luckily my spouse is a veteran and understands the strains and stress* |
| | | *It causes you to take the military as your number one priority* |
| | | *I have always found sex to be an extremely good stress buster* |
| | | *After 30 years of being happily married its all about communication and putting time in the diary* |
| | *Focus on relational quality* | *We talk about our future plans post army all the time. That is a period we are both very much looking forward to* |
| | | *We still make time for each other and have a strong marriage* |
| | | *I am married, my wife and i share the same sex drive, enjoy experimenting and have sex daily* |
| | | *I believe we have a healthy sex life which contributes to my lack of feeling stressed at work, happy wife, happy life* |
| | | *Sex life is healthy and fun* |
| | | *My partner and I have are good at supporting each other if one of us has had a stressful day. We understand that it can make us irritable and we try to deal with it in healthy ways* |

| | |
|---|---|
| | *A very understanding and supportive wife allows this to happen even if time at home is shortened to ensure it stays separate* |
| | *Luckily my spouse is a veteran and understands the strains and stress* |
| | *I have not felt any impact and I am content and happy with my relationship* |
| | *I would say I have a healthy and positive sex life with my partner* |
| | *Married and would like to think we are both happy and have a really good sex life* |
| | *Almost non-existent, but not really too much of a problem. Sleep is our favourite bedtime activity at the moment* |
| | *I would say we have a happy sexual relationship* |
| | *My wife has a very stressful job and we have a busy life style. However, we still make time for each other and have a strong marriage* |
| | *We do not currently find it an issue but spend less time than we would like with each other…* |
| | *...being so private and intimate with your partner, it's something that only you and your partner actually know what happened and it creates a bigger bond between the pair.* |
| | *I find that I do not get stressed that often, and If I am then exercise is a massive help* |
| | *Sometimes sex is used as a release* |
| | *I need sex to de-stress after a hard day at work* |
| *Utilising resources* | *Due to internet research and because we have talked about what makes her feel relaxed and what she likes* |

| | |
|---|---|
| | *I suspect that the levels of stress will eventually lead me to leave the armed forces rather than allow it to effect my relationship*<br><br>*II am good at dealing with stress and am very good at 'switching off' from work commitments and 'reflecting' when doing physical exercise*<br><br>*Having gone through support for PTSD and depression I am now comfortable with stress, managing my output and the expectations of my seniors.* |

### 7.5.1 ***Making positive choices***

Soldiers who spoke about their careers with warmth and enthusiasm, described an ability to control some aspects of their lives, mostly outside of Army commitment. This group were able to have a more positive perspective on stress management and ownership of their personal wellbeing.

*'I am good at dealing with stress and am very good at 'switching off' from work commitments and 'reflecting' when doing physical exercise' [304517-304509-41724932]*

*After 30 years of being happily married it's all about communication and putting time in the diary to get away for city breaks, time just for the two of you. [304517-304509-41061261]*

Soldiers who were able to see past the military, to consider future planning and make time for themselves, demonstrated greater self-care and autonomy and felt happier in themselves.

### 7.5.2 ***Focus on relational quality***

The analysis placed relational quality as a significant contributor to the data. Acknowledging peoples pervasive need to attach and belong (Baumeister & Leary, 1995; Bowlby, 2005; Seppala et al., 2013), the commentary signalled

> *'My wife has a very stressful job and we have a busy lifestyle. However, we still make time for each other and have a strong marriage' [304517-304509-41347995]*

> *'My partner and I have are good at supporting each other if one of us has had a stressful day. We understand that it can make us irritable and we try to deal with it in healthy ways' [304517-304509-41187142]*

that those who are able to maintain their intimate connection felt more able to cope with daily pressures.

Interpersonal relationships serve as an important part of a soldier's support system (Badour et al., 2015). Those participants who saw healthy relationships and sex a positive part of their overall personal wellbeing, spoke much confidently about controlling their stressors. There was a sense of optimism and personal happiness that was lacking in the other themes.

> *'my wife and I share the same sex drive, enjoy experimenting and have sex daily, assuming I am not away for work. I believe we have a healthy sex life which contributes to my lack of feeling stressed at work, happy wife, happy life' [304517-304509-40720104]*

This female Officer explained her stressors but appeared able to recognise that intimacy and closeness can contribute to feeling better in herself.

> *'I am up at 0530 every morning and do not stop all day. I have a vast job to cover (both geographically and responsibilities) and have never managed to be on top of things which I find hard. In addition to juggling family commitments and the fact that my civilian partner works long hours and weekends means neither of us have the energy for sex but when we do it is loving, and we feel close.'*
> *[304517-304509-43647380]*

Good relational quality was a significant subordinate theme that changed the tone and expression of data. Soldiers spoke of closeness and the impact of how good relationships and healthy sex-lives created a more relaxed frame of mind.

> *'I find that my wife and I experience less tension in our relationship when we are having sex regularly, I feel emotionally closer to her when we have sex regularly' [304517-304509-41715963]*

### 7.5.3 ***Utilising resources***

Similar to making positive choices, those individuals who had time and the inclination to access resources open to them, demonstrated lower levels of stress and greater contentment.

*'I feel that my military experiences have both equipped me with the tools to cope with stress and the perspective to recognise those things that truly require me to worry'* *[304517-304509-41715963]*

*'I find that I do not get stressed that often, and If I am then exercise is a massive help'* *[304517-304509-41521836]*

Soldiers who talked of self-empowerment, self-care and taking control exhibit calmer and more measured commentaries. They did not pretend life was perfect, but talked about the challenges of the Army and how they have learned to cope, both in terms of what is expected of them from an occupational and relationship perspective, but also in terms of what they want for themselves.

*'Work is stressful. I am hoping that once I leave the Army and am able to get into a less stressful and 'fast paced life' then I can settle and our concerns can be properly addressed'* *[304517-304509-40715784]*

For some soldiers, there was a recognition that couple intimacy and sex was also a useful resource for self-care. Bonding and physically relaxing after sex were noted as a helpful way to destress and detach from the work stresses.

*'I have always found sex and intimacy in a relationship to be a de-stressor… Consequently, during sex I find myself thinking about nothing else other than the warmth and intimacy of my partner. Everything else falls away into the background with the outcome is that I become more relaxed in general. I also sleep much deeper and for longer after sex]'* *[304517-304509-41180016]*

*'It [sex] can actually help to relieve stress and therefore is a good thing'* *[304517-304509-41166451]*

### 7.5.4 ***Theme summary***

Self-empowerment and control play a vital role in personal self-regulation (Bandura, 2002) and stories of personal agency, personal choice and self-care were peppered throughout the data. It created a very positive and clear theme that demonstrated how much perception impacts on the levels of stress experienced by soldiers. Concurring with the findings of Themes 1 & 2, feeling powerless contributed to attritional stress, whilst feeling empowered appeared to reduce stress.

Positive personal agency was an optimistic theme that included encouraging stories of nourishing choices and behaviour. Soldiers displayed good interpersonal skills, a healthy work / life balance and confident life choices. Accepting that Army life will be challenging, yet having a plan to meet them, appeared to stop soldiers feeling overwhelmed or emotionally immobilised.

## 7.6 Theme 4: Tempo as a barrier to healthy intimate attachments

Tempo as a barrier to healthy intimate attachments refers to the pace of Army life being an obstacle to meaningful relationships and a healthy sex-life. This

includes both emotional and physical symptomology that inhibits spontaneous desire. Exhaustion, loss of desire, emotional numbing and extra-dyadic behaviour were attributed to feeling overworked causing a relational and sexual disconnection. Soldiers did not complain about hard work nor did they discuss the demands of Operations. The data showed frustration and stress specifically related to peacetime tempo and the unrelenting demand on personal capacity, to the detriment of their personal lives.

Table 59: *Quotations linked to Tempo as a Barrier to Healthy Intimate Attachments*

| Superordinate Theme | Subordinate Themes | Pertinent Quotations |
|---|---|---|
| *Tempo as a barrier to healthy intimate attachments* | *Bad busy* | *Increased stress and lack of family time*<br>*Direct impact on my relationships*<br>*It deters people from wanting to start a relationship*<br>*Strain on relationships*<br>*Distance from home/partner*<br>*Difficult spending time at home*<br>*Military clashes with sexual life*<br>*Work commitments and staying up late impacts on my availability for sex with my partner*<br>*Yes it [work stress] has impacted on long term relationships*<br>*Work related stress or just being tied or fatigued will clearly have an impacted on your desire to have or want sex*<br>*Stress definitely effects my relationship*<br>*Stress impacts how much I care to give people my time*<br>*Barriers to a healthy sex life* |

*The stresses of the army affect my relationships*

*Stress at work can lead to stress at home*

*I fear that my late nights cause me to either be home after my partner has gone to bed or due to not being there at a normal hour like society,*

*The stress of long hours, undermanning and constantly being asked to do more with less has had a direct and significant impact upon my sex life*

*The opportunities for intimate contact is vastly reduced which has led to extra stress*

*The Army and the demands of the job/lifestyle has a largely negative impact on my personal life and relationship.*

*Too busy with work and other factors to even care about it*

*Don't get to go home enough to shag my Mrs*

*Stress impacts my relationship as it makes me slightly more agitated and I would tend to be slightly less patient than normal with my family*

*…we both bring our stresses home with us*

*I firmly believe that the pace of Army life has (in the past) had an adverse effect on my sexual appetite*

*To stressed from work to want to have sex because I'm too tired when I get home*

*Stress at work have negatively impacted my sex life*

*I find that sometimes I have that much of a work load that I am not interested in sex*

*I can remember not having the energy or wish to sleep with my wife due to stress and exhaustion from work,*

*While in relationships, extreme stress has seemed to have the consequence of reducing my sex drive.*

| | |
|---|---|
| | *…the frustrations on your mind continue and therefore impact directly on the sexual relations you would normally have* |
| | *Time committed to work can sometimes mean that I am too tired to get home to engage properly with my partner.* |
| | *I feel I became less interested in sex during a previous more stressful point in my life* |
| | *Increased stress and lack of family time has impacted on my sex life* |
| *Loss of libido* | *Sex became even more dull to me* |
| | *You have very stressful days at work and by the time …you get home and have your tea you just can't be bothered to engage in sexual activity with your loved one* |
| | *…work life and my household chores (we are renovating our home) leaves me with a lower sex drive than she might like and this is a cause for heated discussion* |
| | *This can be fairly unfulfilling, especially if my partner and I are not in sync.* |
| | *My sex life is practically none existent and it's hard to pinpoint why* |
| | *My wife and I are both in stressful professional jobs.* |
| | *I enjoy sex but have found that work-related stress and tiredness has significantly decreased my sex drive* |
| | *Due to getting home later, needing time to de-stress and relax after work my sleep pattern has been totally disrupted and does not correlate with my spouses. As such the opportunities for intimate contact is vastly reduced which has led to extra stress.* |

| | |
|---|---|
| | *My sex life is clearly impacted* |
| | *Work-related stress and tiredness has significantly decreased my sex drive* |
| | *Too many long days and increasing demands from the work environment which eats away at your libido* |
| | *Can't be bothered to engage in sexual activity* |
| | *Sometimes I don't feel emotionally connected to my boyfriend during sex, I believe this is because of the stress that I am experiencing* |
| | *Sometimes feel distant* |
| | *myself feeling emotionally numb and lose interest in things* |
| | *I quite often feel like an outsider in society, due to the Army* |
| | *Leaves me feeling unable to fit in* |
| | *Not been able to connect with anyone on a physical level, I often find I shall make excuses or cancel dates last minute, I very much want a relationship* |
| *Emotional numbing* | *even sleeping with people you don't find attractive just to feel something* |
| | *In a previous high pressure job, stress had a significant impact on my sex life. Unable to switch off from work, the emotional connection between my wife and I during sex deteriorated* |
| | *I actively avoid relationships because of the stressful position I'm in* |
| | *The work was too much, yet I had to find an escape and managed to do so once a week via face to face encounters that I met online* |

| | |
|---|---|
| | *When I'm stressed I always turn to online slots (gambling)* |
| | *Stress from work makes me irritable and drink more* |
| | *Watching too much porn during the week has a detrimental impact on my ability to perform at the weekend.* |
| | *There is a direct link between my ability to perform and how much masturbation has taken place during the week* |
| | *[I have] the desire to be with someone outside my marriage* |
| | *…for the most part they lead to self-gratification, however if left unchecked can easily manifest in sexual feelings towards others.* |
| *Extra-dyadic behaviour* | *This leads to more masturbation and watching of internet pornography etc. in the place of sexual activity with my partner* |
| | *Within Regimental life there are a lot of temptations for infidelity* |
| | *There are a lot of lonely young wives/husbands when the unit is on tour and men will be men and women will be women. Alcohol, boredom, stress, loneliness all play a part* |

### 7.6.1 ***Bad busy***

This study showed that it is not just in periods of high operational demand that cause workplace strain, but demonstrated that individuals can also feel the impact of increased tempo due to amplified demand on them as individuals, at many other points in their career.

*'The workload and time away from friends and family has had a direct impact on my relationships'* *[304517-304509-40607194]*

*'Busy-ness / tiredness and being away a lot is an issue'* *[304517-304509-41153697]*

Often referred to as good busy / bad busy with the Army, there is a recognition that there are times when work is busy in a good useful way and there are other times, outside of pre-deployment training, exercise or operational commitments, when it can feel inane and unsatisfying. Good busy / bad busy is subjective. Within the qualitative data, a perception of bad busy is prevalent. With a sense of boredom, relentless working, feeling devalued and no end in sight, soldiers report feeling exhausted with their current work pace. Previous research into role ambiguity reinforces the view that where tasks are also considered poorly defined, more capacity is required to complete them, contributing to work fatigue, exhaustion and reduced morale (Frone & Blais, 2019).

*'I find that sometimes I have that much of a workload that I am not interested in sex. there is no real reason just I am too tired and thinking about the tasks that I will have to complete tomorrow'* *[304517-304509-41403185]*

*'Sadly, there is not enough field time and far too much unappealing, uninteresting office time instead'* *[304517-304509-41005660]*

Bad busy is the individual feeling that the tasks that have been set are not an effective use of work time or what could have been personal time, particularly evenings and weekends. Recognising that perception is critical to how

individuals manage stress (McGonigal, 2013), believing that you are bad busy, regardless of whether your colleagues feel the same, is enough to trigger a stress response or to feel devalued. This links to earlier themes of disconnection, separation and a perception of poor leadership.

Whilst there is evidence that the Army is working hard to fix the manning issues and peacetime workload (Beckwith, 2020), soldiers speak of feeling exhausted and fatigued at the current pace of work with an undertone on unrelenting circularity. There is a sense that time is precious and not using it for *good busy* creates additional stress. Soldiers do not mind being busy, *it is the military, it is expected,* but they do report feeling frustrated at being so busy outside of normal hours that their relationships are suffering or busy when it is deemed unnecessary.

*'The military is more stressful than most careers and a lot of the time the stress is unnecessary' [304517-304509-41187142]*

*'Time committed to work can sometimes mean that I am too tired when I get home to engage properly with my partner' [304517-304509-43319724]*

### 7.6.2 ***Loss of libido***

The statistical results highlighted a significant number of soldiers with above average sexual difficulties and lower than normal sexual desire. When reviewing the qualitative data, it was unrealistic to be able to objectively analyse without that knowledge in mind. There was an expectation to hear soldiers talk about sexual concerns, the aim for this section was to understand why and how

it related to how they experience personal stress. In most cases sexual activity was linked directly to time, busyness and tiredness.

*'Work related stress or just being tied or fatigued will clearly have an impacted on your desire to have or want sex' [304517-304509-41061261]*

*'I do feel as though the military impacts massively on my sex life with my partner. By the time you get home and have your tea you just can't be bothered to engage in sexual activity with your loved one' [304517-304509-40782930]*

Increased stress and problematic sexual functioning are inextricably linked (Morokqff & Gillilland, 1993). Participants recognised that and openly discussed their own experiences with an understanding that work strain and fatigue would have an impact on sexual desire. Soldiers spoke with a frankness and maturity around the subject with many wishing they had more time and energy for this aspects of their lives.

The link between elevated stress hormones and decreasing sex hormones is understood, as is the impact of poor interpersonal relationships and trauma exposure on sexual functioning (Clifford & McCauley, 2019). Within this study, no prior information was given on terminology or causality, which allowed for participants to speak openly in their own words. The results showed a ubiquitous, collective view that heightened tempo and the resulting work pressure, directly linked to their sex-drive and was often a barrier to sexual opportunity.

### 7.6.3 ***Emotional numbing***

Emotional numbing is a coping mechanism for emotional trauma or elevated stress. Described as a feeling of despondency or emptiness, it is a barrier to emotional closeness. Clinically, it is a known symptom of mental health

disorders such as anxiety or depression. In this study it refers to feelings of disconnection and a sense of feeling emotionless in relation to intimate partnerships. Emotional numbness was explicitly named by some participants or alluded to by others.

*'Unable to switch off from work, the emotional connection between my wife and I during sex deteriorated' [304517-304509-41340235]*

*'Also the large periods of inactivity have a big effect on mental health. I do not appreciate time off and can also find myself feeling emotionally numb' [304517-304509-40864185]*

Within the data, details of emotional numbing are present in conjunction with declining sexual desire and work dissatisfaction. In academia, emotional numbing is evidenced through a myriad of PTSD research studies (Amdur & Liberzon, 2001; Nunnink et al., 2010), it is however, less prevalent in studies of routine occupational stress within the military. This study showed a clear theme of disengagement and disconnection within the intimate partner relationship, due to the increased work tempo.

### 7.6.4 ***Extra-dyadic behaviour***

Earlier themes prove that prolonged periods of separation and barrack based occupational demand contribute to the interpersonal strain caused by military

service. Within the data, discussion surrounding elevated stress caused by increased tempo, suggested that these factors also contribute to unhealthy behaviours outside of the primary romantic relationship.

*'For myself personally I spent a lot of time away over my career and single for several years especially during tours of Afghanistan, with internet access I went on dating sites to meet people to talk to people for many reasons, loneliness, to feel wanted, someone to talk to, to chat to someone outside of the military, to still feel part of society, we all want to feel loved in any way we can find and for me this escalated from dating sites to sexual site that you could pick up and meet women for sex, it for that one night made you feel intimate with someone and wanted that I had a purpose or a need outside of the military. This escalated to a need to feel that from strangers so much so that now I can't stop using the sites and it has almost destroyed my relationship'* *[304517-304509-43288045]*

*'When I'm stressed I always turn to online slots (gambling)'* *[304517-304509-40669478]*

Engagement of these acts were closely linked to separation and workload for some participants, who discussed how stress was managed through other reward-seeking behaviours. Whether that was gambling, using pornography or alcohol, there was an underlying sense that these activities were something they felt they had to do to get by, rather than something they were proud of or wanted to engage in.

*'Watching too much porn during the week has a detrimental impact on my ability to perform at the weekend. It doesn't dampen my desire for sex, but sometimes limits my ability to perform' [304517-304509-44628962]*

In terms of infidelity, there was a mix of extra-dyadic behaviours. Soldiers talked about meeting people online, using technology for sex and meeting other serving personnel or partners. Stories of unfaithfulness were not prevalent in the data.

*'Last year, I was away for a year. Overseas. The work was too much, yet I had to find an escape and managed to do so once a week via face to face encounters that I met online' [304517-304509-40870059]*

*'Within Regimental life there are a lot of temptations for infidelity, both in barracks and on tours (married and single, men and women alike). There are a lot of lonely young wives/husbands when the unit is on tour and men will be men and women will be women. Alcohol, boredom, stress, loneliness all play a part' [304517-304509-43264262]*

### 7.6.5 ***Theme summary***

The perception that unnecessary increased tempo is causing problems for the soldier and their primary relationship is convincing within the findings. Soldiers report being *bad busy* with tasks and work hours that are damaging to their personal wellbeing and healthy attachments. People report feeling stressed or resentful.

Loss of libido is attributed to being too tired with emotional numbing threading through this theme. For some, this had led to other reward-seeking behaviours that fall outside of the relationship, such as, pornography, alcohol, gambling or meeting people online.

## 7.7 Conclusions of qualitative inquiry

The findings of this research also demonstrated that symptomology usually associated with PTSD are also prevalent within non-combat working environments where there is prolonged routine stress or personal strain. Defined as ASF, soldiers are managing stress from many different areas creating overwhelming fatigue and problematic physical concerns. Loss of libido were evidenced alongside a sense that soldiers felt powerless to improve their work /life balance.

The current pace of work was considered avoidable for peacetime operations. Soldiers saw the Army itself as the cause of this, rather than considering individual commanding styles. There was evidence that changes in management directly linked to personal happiness and relational satisfaction. This stretched to partner contentment which was associated with feeling undervalued.

However, those soldiers who were able to take a more positive approach to occupational demand demonstrated higher levels of satisfaction, both at work and within their relationships. Taking control outside of work environment, connecting to their intimate partners, exercising and using the resources available to them, all showed a marked improvement in sexual connection, energy and wellbeing.

## 7.8 Researcher reflections

When I started this process, I had no idea that this research would not only produce large scale quantitative data on stress and sexual behaviour, but it would also allow the reality of current stress in the British Army to be heard through over 155 soldier vignettes. I expected some reluctance to discuss

stress and sexual concerns and was surprised to see it there in abundance suggesting honesty and engagement with the subject matter. Real stories of real experience that would give context and meaning to the statistical results. I felt a huge responsibility to the data; to ensure that it was used in a way that respects each of the soldiers that elected to share their experience, but also to be confident that any analysis was robust and accurate.

When reviewing the text, the standout comment for me as a researcher was, thank you. There was a genuine sense that whilst the quantitative section was a reasonably lengthy survey, this topic was still a conversation that participants were keen to contribute to. Moreover, they were grateful to have a platform to discuss this subject.

*'Finally thanks again for this wonderful opportunity'*

*'Thanks. I feel better for talking'*

*'A wonderful opportunity to be able to share my thoughts anonymously here.'*

This chapter provided a platform for the voices of the soldier, many of which felt able to openly talk about sex and intimacy in relation to their personal pressures for the first time. It offered a glimpse of personal reality, painting a picture of current service life.

Work on this chapter was slow, due to the nature of understanding these stories whilst holding what was known about the individuals from the statistical analysis. With over 3,500 words to analyse, information management was complex. I reflected on my early study population targets and found myself thankful for the ethics process which forced a more realistic participant sample.

Conscious of the Braun and Clarke (2019) notion that themes should never emerge, I was aware that themes should be vigorously evidenced. That the data in this study was comprehensive enough, that it should speak for itself. Having worked with the military for over ten years, it was unsurprising to see soldiers

content to share their stories, I was however, taken aback by the sadness in some of their accounts. This furthered my motivation to find helpful conclusions and practical recommendations from this study that could be beneficial to the individual, their partner and the wider Army.

Soldiers are genuinely funny; they use their humour to get through what most people would be unable to cope with, both physically and mentality. But behind that humour is a reality that reinforces the notion that life in the military can be tough. Tough in terms of personal pressure, but also tough on the family, relationships and individual happiness. When I read one soldiers written response *'I don't get home enough to shag my Mrs'*, I couldn't help but smile – I could actually picture him saying this. Because that is exactly the type of flippant response that I have seen in my therapy room, over and over again. But there is truth in the banter that soldiers throw at each other, and if they have bothered to say it to me, as a clinician or a researcher, I have a duty to listen.

# 8 PHASE 3: Merging

*'A time for self-scrutiny'*

## 8.1 Introduction

Phase 3 of the data analysis focused on the integration principles of this research using a mixed methods approach. This chapter sought to describe the process of combining the qualitative results and quantitative findings to produce key at-risk groups for problematic sexual experiences and maladaptive behaviours.

Using published integration frameworks by Fetters et al. (2013), the exercise of merging and meaning making was undertaken cautiously, recognising the importance of this element of the research study. Consideration was given to research paradigms and data -mixing frameworks within the inquiry. The review had one primary aim: to define those groups of soldiers who were experiencing elevated stress and resilience injury through statistical data and contextual experience. The findings of which would allow for Phase 4, which would re-run statistical analysis for the at-risk categories comparing results to the full study sample.

## 8.2 Interpretation reflexivity

Reflexivity is more closely associated with the paradigms of qualitative research (Walker, Read, & Priest, 2013). However, it has a valuable place in mixed-methods research. Alley et al. (2015, p. 426) discusses the value of researchers using reflexive practice within evidence-based research, suggesting it support them to "critically examine the nature of their work and to identify how their underlying values, assumptions, and beliefs affect the synthesis, dissemination, exchange, and application of their research findings".

At the final stage of Phase 3 merging, there was a need to stop and reflect on how the quantitative and qualitative elements would combine. As a critical cog in the process of merging, it aimed to place value on the needs of the participants in conjunction with the needs of the research.

A reflexive pause, allowed the research to congruently consider:

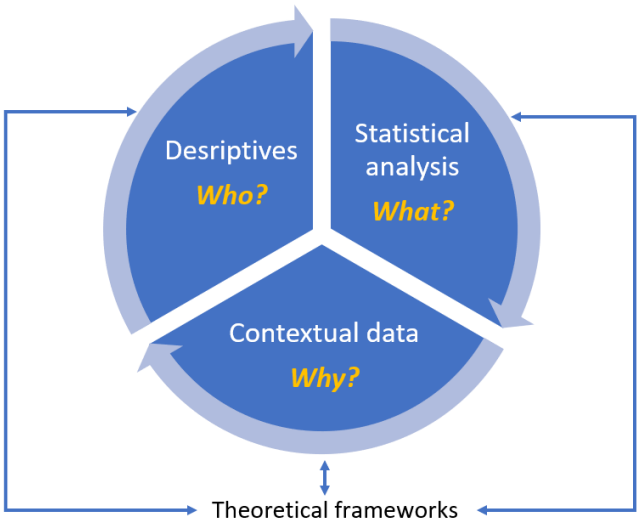
- Researcher bias
    - Could meaning have been applied to the interpretations that were not truly representative in the data?
- The voice of the individual
    - Was there enough clear evidence for convergent themes?
    - Did the power of the voice of the soldier equal the weight of the scientific evidence?
    - Which evidence could affect the most positive change?
- Had the research questions been answered satisfactorily?
    - Had the contextual data led to hypothesis separate to the research aim?
    - Were the research boundaries maintained?
- What were the ethical considerations of the findings?
    - Could the results do harm?
        - Emotionally to the participants
        - Relationally to the participants families
        - Reputationally to the UKs defence profile

## 8.3 Integration framework

Ragin and Amoroso (2011) defined social research as the interaction between ideas and evidence. The successful combing of both statistical truth and existential experience would be critical in providing a robust framework from which to answer the research questions. Data from the qualitative questions were able to provide a snapshot of current self-reporting levels of stress, sexual contentment and behaviours, including compulsivity and online sexual activity. The qualitative findings enriched these survey results and provided a deeper understanding of the individual experience of stress for British Army soldiers.

In order to bring these two dichotomised data sets together, a clear mixed-methods data integration framework was adopted. This included a process of validation and comparison to find common themes and analysis across Phase 1 and 2 results. Data from the descriptive and correlation analysis (quantitative) was compared to the four main themes derived from the thematic analysis (qualitative) to understand how soldiers make sense of their social world. The process of merging was circular (see Figure 24) bringing together the who, what and why.

Figure 24 Process for identifying which soldiers were most at-risk




Information from the descriptive analysis was used to identify who was the most stressed, this was then combined with the qualitative finding to look at what soldiers were saying about their own experiences, who was struggling at what points in their lives and why. The merging process also applied a theoretical lens. For example, looking at the cognitive transactional process of stress, which groups of soldiers felt that they didn't have the resources to meet the demand (not coping, isolating, failed relationships); the effort-rewards imbalance, showing soldiers who felt their labour was valued (the army doesn't care); the dual control model demonstrating those soldiers who talk of suppressing the effects of stress (emotional numbing or impulsivity) and finally the biopsychosocial model, which soldier showed physical symptomology (poor sleep hygiene), poor resilience and spoke of poor social structures (being overseas and away from support).

These results were then combined with the quantitative self-reporting measures which showed which soldiers had greater correlations between stress and sexual functioning. The praxis of this research used interpretative skills to offer evidence-based insights into soldier groups who were either struggling with mounting stress or to highlight those soldiers coping well, displaying personal resilience with effective coping strategies.

Table 60 showed the merging process in more detail. Displaying the data demonstrated where soldiers might be exposed to additional pressures that were likely to impact on relationships, intimacy and their wider wellbeing. These were then considered in terms of merging and how they might fit together to offer robust findings for key at-risk groups.

Table 60: *Comparison of information from quantitative results and qualitative findings*

| | **QUANTITATIVE** | **QUALATITIVE** |
|---|---|---|
| Theme | Statistical self-reporting measures | Contextual questioning |
| | Descriptive Analysis | |
| **Attritional stress & fatigue (ASF)** | ***Stress is associated with declining sexual functioning r 0.494 (p<0.01)***<br><br>Analysis showed that within the overall data, 9.16% report stress levels that were considered high and problematic.<br><br>***Groups who reported elevated stress levels***<br>1. Soldiers that have served for over 20 years who were single<br>2. Other ranks who lived alone<br>3. Soldiers currently separating or separated demonstrated the most at-risk category | ***Work/life balance***<br>1. An inability to switch off or to leave work at the office<br><br>***Capacity to cope with global stressors***<br>2. The accumulative effect of managing multiple external demands that become detrimental to mental health, physical well-being and healthy relationships |

| | | |
|---|---|---|
| | 4. Soldiers in transition (waiting to leave home, parents or ex-partners),<br>5. The highest scoring group for the sexes reported stress was female soldiers aged 51+ | **Physical symptomology**<br>3. Lack of sleep and feeling fatigued alongside the physical change in sexual desire<br><br>**Feeling disconnected from loved ones**<br>4. Feelings of isolation, separation and geographical distance |
| **The Army doesn't care** | Whilst this wasn't measured within the instruments, indications from the findings suggested that stress and sexual functioning increased at times of greater occupational pressures:<br><br>1. Transitions<br>2. Key promotional brackets<br>3. When isolated from family | **Perception of poor leadership**<br>1. Dissatisfaction and loss of trust in the organisation<br><br>**Feeling powerless**<br>2. Loss of personal governance and control<br><br>**Seeing the Army as anthropomorphic**<br>3. Viewing the Army as solely responsible for personal stress<br><br>**Partner discontent**<br>4. Irritation of the impact of the military on the family |
| **Personal agency** | ***Groups who reported robust coping strategies***<br><br>1. Soldiers with a less than 1 years' service<br><br>Recent focus on Army resilience during basic training appeared to be having a | **Making positive choices**<br>1. Personal emphasis on areas where personal choice applies<br><br>**Focus on relational quality**<br>2. Harmonious interpersonal relationships as a contributor to wellbeing. |

| | | |
|---|---|---|
| | positive effect on soldiers moving into trade roles.<br><br>2. Soldiers on tour or exercise Mission specific roles / time periods where soldiers did not have to worry about the family or wider pressures. One job, one focus. Also 'Good Busy'.<br><br>3. Warrant Officers Roles where there is a greater amount of autonomy and control. | **Utilising resources**<br><br>3. The motivation self-efficacy |
| **Tempo as a barrier to healthy intimate attachments** | 1. Male soldiers reported significantly higher levels of problematic sexual functioning than the published norms for the UK.<br>2. Separated soldiers have the highest scoring risk for problematic sexual functioning<br>3.<br><br>***Other considerations***<br><br>*Female soldiers between the ages of 26-40 were less affected by desire disorders*<br><br>*Sexual compulsivity did not present as problematic within the British Army* | **Bad busy**<br><br>1. Having to complete tasks (working late) when it is viewed as unnecessary<br><br>**Loss of libido**<br><br>2. Explaining how stress and sex is inextricably linked<br><br>***Disconnection***<br><br>3. Feelings of despondency or emptiness<br><br>***Extra-dyadic behaviour***<br><br>4. Reward-seeking behaviours in response to stress outside of the primary relationship |

| | | |
|---|---|---|
| | *15.7% of participants were 'at-risk' or 'high-risk' for problematic online sexual behaviours* | |

There was very little qualitative data provided on soldier experience of OSA, CSB and living arrangements. Therefore, these topics were less visible in the process of merging. They were considered in relation to several aspects of the synthesis, specifically in terms of emotional disconnection, relational quality and personal agency where the statistical results demonstrated links between sexual behaviour and intimate relationship satisfaction.

Recognising the evidence from Phase 1 which highlighted OSA as generally unproblematic, the decision was made to focus on the first elements of the overarching research aim; looking specifically at sexual functioning as an early indicator for declining resilience and poor stress appraisal regulation. Maladaptive sexual behaviours were not identified as a significant concern.

## 8.4 Merging classifications

The results of the statistical analysis in relation to the 6 research questions had demonstrated a clear link between stress and sexual functioning. It had shown that OSA was broadly unproblematic with a lower correlation to elevated stress. It did however suggest that increased OSA could impact on sexual satisfaction but not desire. Together with the descriptive, which were able to demonstrate patterns between demographics and the thematic analysis results, data were funnelled to create major merging classifications.

Within the descriptive analysis there was clear evidence that some groups had higher self-reported stress scores that indicated clinically problematic stress levels. Equally, there were superordinate and subordinate themes within the qualitative findings that described the actuality of those pressures in real life. When combined, it created four merging classifications:

- Relationship pressure points

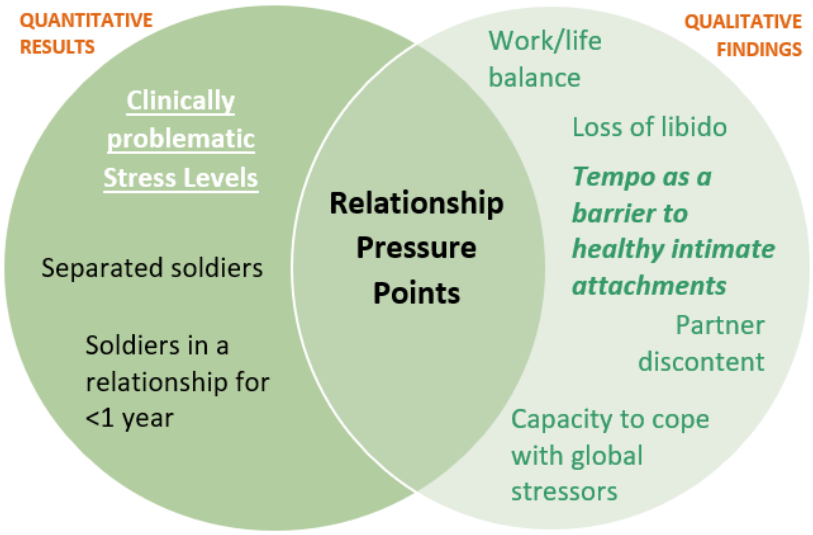
- Disconnection and isolation
- Increased occupational demand
- In-service life stage transitions

These categories were explored in more detail to acknowledge the evidence within the previous Phase 1 and 2 findings to support the identification of these groups as accurately classified at-risk groups and therefore suitable for further analysis in Phase 4.

### 8.4.1 ***Results 1: Relationship pressure points***

Relationships are at the heart of this study and were discussed openly within the written stories of the participants. With examples of work/life balance struggles and loss of sexual desire, a number of relationship pressure points became apparent. This was confirmed by the self-reporting stress scoring which evidenced that certain demographics were experiencing higher levels of stress.

Figure 25: Relationship pressure points



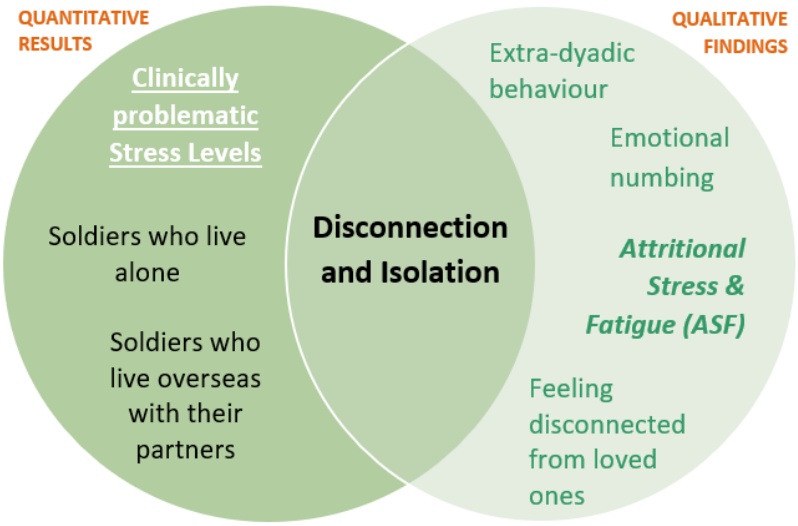

Soldiers in new relationships were included on the basis of previously published evidence that couples without children are at higher risk of relationship breakdown following periods of separation or deployment (Rowe et al., 2013).

It is recognised that attritional stress builds when the needs of the family are combined with the needs of the Army (Segal, 1986); however, for this risk category, the focus was on measuring those beginning to form relationships and those coping with separation. Moreover, if regular exposure to normative stress in Army life can strengthen resiliency (Cramm et al., 2018), then it can be seen that younger personnel will be more likely to struggle with military specific pressures than those who are more accustomed to service life.

### 8.4.2 ***Results 2: Disconnection and isolation***

The impact of long periods of separation had been identified as a contributor to marital and relational discord and emotional disconnection for soldiers in the British Army (Finnegan et al., 2011; Keeling, 2014; Nicholson, 2009). Living overseas or away from the social support networks can be difficult for some families (Blakely et al., 2014). Disconnection and isolation were prevalent in the soldiers' free text fields, where they described the difficulties of being away from loved ones, particularly when it was deemed unnecessary.

Figure 26: Disconnection and isolation

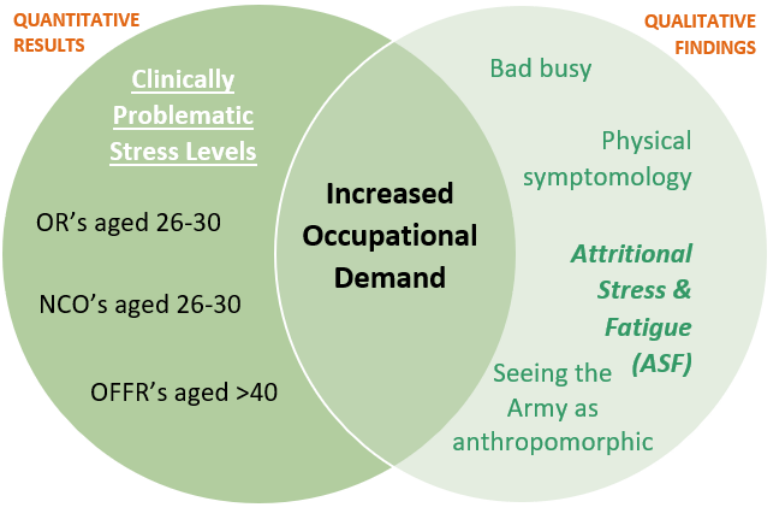



Feeling disconnected from important figures in their lives was considered a barrier to intimacy, a factor of emotional numbing and for some, resulting in looking elsewhere for connection and physical reward.

### 8.4.3 ***Results 3: Increased occupational responsibility***

Within the study, soldier's spoke of long workdays, increased occupational demand and the frustration of not being able to spend time with loved ones in a period that was considered peacetime tempo.

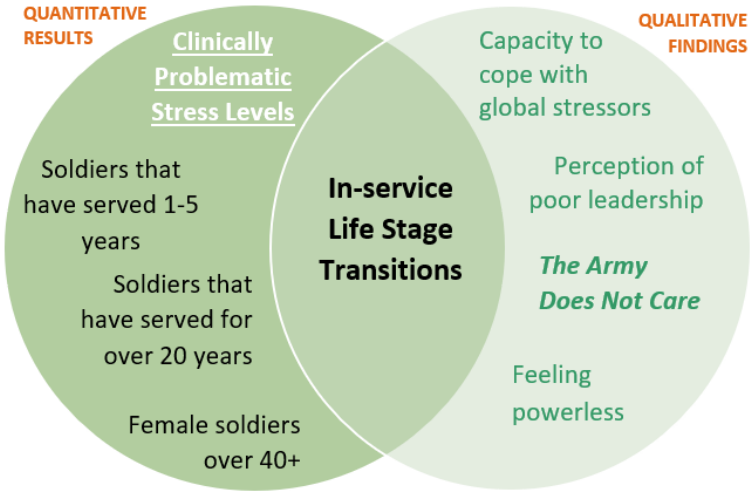
Figure 27: Increased occupational demand




### 8.4.4 ***Results 4: In-service life transitions***

Major life transitions are known to increase personal pressure and life in the Service is no different. Results from the 2019 Armed Forces Mental Health reported a number of key groups most at risk for common mental health disorders. Female soldiers were at higher risk, as were those aged 20-29 and between 35-39. This was consistent with the findings of this study with soldiers speaking of additional work and family pressures around these times.

Figure 28: In-service life transitions




Data from the statistical analysis and the soldier vignettes demonstrated 3 groups that reported pressure on their personal ability to cope in times of change that contributed to attritional stress. This could be transitions such as coming to the end of a career and feeling the exhaustion of managing that adjustment or being a young family with demands at home that are not always recognised within the chain-of-command. The needs of the Army come first, and for some, they feel powerless to manage their own change or contentment.

As female soldiers were known to experience greater stress in their military careers (Bray et al., 2001; Bridger et al., 2013), coupled with the statistical evidence that females 40+ demonstrated problematic stress levels within this study, this group were included in the most at-risk groups for Phase 4 along with wider transitioning groups.

### 8.4.5 ***Positives themes***

Whilst these 4 classifications focussed on where soldiers were struggling with stress, the other positive themes supporting wellbeing and personal agency would be used to support discussions on progressive recommendations for training and treatment protocols within the discussion and recommendation chapters.

- Personal agency

- Self-efficacy
- Self-empowerment and control

This compliments other work in the field that highlight the positive aspects of military life on relationships, wellbeing and personal growth (Blakely et al., 2014; Finnegan et al., 2011; Stein & Bartone, 2020).

These themes were separate to the identification of at-risk groups, but were necessary to inform the study discussion, recommendations and conclusions.

## 8.5 Conclusions

The process of merging created 4 major classifications providing 10 at-risk groups of potentially more problematic stress and sexual functioning. These groups would be used to rerun the statistical analysis for the 7 main research questions. Information from the remaining Phase 3 review was used to identify key groups for problematic stress levels and intimacy concerns. These categories divided into the 4 main classifications would be used for targeted analysis against the main research questions to fully investigate if these groups demonstrated a different stress and sexual functioning profile in comparison to the full study sample population.

Table 61 lists the final defined at-risk groups by merged classification to be used in Phase 4.

Table 61: *Final at-risk groups for Phase 4 quantitative analysis*

| At-risk groups |
|---|
| ***Relationship pressure points*** |
| *1. Soldiers in a relationship <1 year* |
| *2. Separated soldiers* |
| ***Disconnection and Isolation*** |
| *3. Soldiers who lived alone* |
| *4. Soldiers who lived overseas with their partners* |
| ***Increased occupational responsibility*** |
| *5. Other ranks aged 26-30* |
| *6. Non-commissioned officers aged 26-30* |
| *7. Commissioned Officers aged >40* |
| ***Life stage transitions*** |
| *8. Soldiers that have served 1-5 years* |
| *9. Soldiers that have served for over 20 years* |
| *10. Female soldiers aged 40+* |

The process of method integration gave the research time to reflect on findings to date and to marry that with current literature in order to be confident of the reliability of the findings. Reflecting on research position and fidelity allowed for a considered approach to merging.

## 8.6 Researcher reflections

Towards the end of this chapter, during a group supervision, a discussion was held regarding the impact of the Covid-19 pandemic. When considering our individual research cohorts, (the neuro-diverse, elderly, grieving parents) I remarked how well British soldiers were coping, based on talking to servicemen in my community. I commented that “soldiers were used to change, they were specifically trained to adapt and overcome and were used to living in small supportive communities. They are doing okay.”

Listening to the other doctoral students discuss their participants' struggles, I had a moment of realisation. Somewhere through my own experiences, I had become culturally indoctrinated myself: I was talking the talk! Yet, I knew from the research that not everyone is able to adapt and overcome. Based on what I now knew, at least 50% of people in my own Army community could be coping with moderate pressures, nearly 10% could be struggling with clinically problematic stress. Soldiers may not have had the additional burden of being furloughed or worrying about income, but I reflected on how many were talking about the additional pressures that came with working from home with small children or worrying about parents or loved ones. How was this situation contributing to attritional stress and fatigue and why was nobody talking about it?

Bandura suggested that our images of reality are shaped by our experience of others. I questioned if I had focussed on a narrow image of reality, based on military culture and my experience of it. Was I viewing the data through a superficial *what was expected or what was already known* lens?

I wondered about how I had interpreted what was being reported (quantitively) and experienced (qualitatively). Much of the study data this research had produced would not ordinarily be openly discussed, as perhaps it wasn't culturally acceptable for soldiers to be stressed or alpha males (Clifford & McCauley, 2019) to have sexual concerns. But this was their private reality, and it was vital this study could be true to their representation of it.

It was a this point I recognised the value of an honest reflection of my results and findings to date, with a pragmatic view of what was well evidenced in the study. I went back through the statistics and double checked my models with the University study skills, was I asking the right questions? I added more depth to the thematic review, was I being objective? And then I added more visual representation in the merging of data to verify my findings, was this the reality of the lives of the participants?

Whilst little changed through this process in terms of evidence and themes, it did provoke a more in-depth explanation of the processes, the removal of further

unnecessary analysis and it created a wider debate on ethics and the implications of the research findings. This part of the doctoral process was extremely helpful in reflecting on my epistemological position as a researcher in order to produce meaningful results.

# 9 PHASE 4: Soldiers At-Risk Quantitative Results

*'Not all relationships are equal'*

## 9.1 Introduction

Phase 4 of the data analysis focused on drawing information from Phases 1, 2 and 3 in order to segment the total sample data into smaller at-risk groups. This allowed for more targeted analysis to understand how certain groups differ in relation to stress, sexual functioning, sexual compulsivity and online sexual activity. Through the Phase 3 data integration, 10 categories were identified as groups with increased personal pressures:

- **Relationship pressure points**
    1. Soldiers in a relationship <1 year
    2. Separating soldiers
- **Disconnection and Isolation**
    3. Soldiers who live alone
    4. Soldiers who live overseas with their partners
- **Known periods of increased occupational demand**
    5. Other ranks aged 26-30
    6. Non-commissioned officers aged 26-30
    7. Commissioned Officers aged >40
- **In-service life-stage transitions**
    8. Soldiers that have served 1-5 years
    9. Soldiers that have served for over 20 years
    10. Female soldiers over 40+

These 10 key groups included those soldiers who were starting or ending their military careers, those that will be liable for increased workloads or at an age where they are more likely to be starting or expanding their families. It also includes groups that were most likely to experience isolation or disconnection.

These 10 groups were segmented from the total sample and the same correlation models were then conducted as per Phase 1. Information sought to identify if those more at-risk for stress would produce markedly different results than those for the total participant sample.

### *9.1.1* ***Exclusions from Phase 4 analysis***

Research questions on living arrangements (Q6) were not subject to further analysis in this phase and deemed completed after Phase 3. Data on living arrangements were useful for shaping a picture of experience but did not contribute to the understanding which soldiers were struggling with poor stress appraisal and coping the most. The research question measuring sexual desire and satisfaction (Q4) did not have enough data within the smaller at-risk groups to warrant meaningful further analysis for group belonging.

## 9.2 Q1: Is stress associated with sexual difficulties?

When reviewing the total sample, preliminary analysis showed an overall link between self-reported stress levels and sexual functioning $r(404) = .494$, $p < 001$ (refer to Table 36). Data demonstrated that for a number of groups, there was a marked difference by demographic. At-risk groups exposed to isolation, increased occupational pressure and life stage transitions, evidenced higher levels of positive linear correlation between stress and sexual functioning.

Table 62: *Correlation between stress and sexual function by at-risk categories*

| At-risk groups | n | r |
|---|---|---|
| ***Relationship pressure points*** | | |
| *1. Soldiers in a relationship <1 year* | 22 | .06 |
| *2. Separated soldiers* | 8 | .23 [1] |
| ***Disconnection and Isolation*** | | |
| *3. Soldiers who lived alone* | 50 | .61** |
| *4. Soldiers who lived overseas with their partners* | 48 | .70** |
| ***Increased occupational demand*** | | |
| *5. Other ranks aged 26-30* | 19 | .62** |
| *6. Non-commissioned officers aged 26-30* | 32 | .52** |
| *7. Commissioned Officers aged >40* | 71 | .33* |
| ***Life stage transitions*** | | |
| *8. Soldiers that have served 1-5 years* | 51 | .52** |
| *9. Soldiers that have served for >20 years* | 113 | .57** |
| *10. Female soldiers aged 40+* | 12 | .46 |

*

p<.05 ** p<.01

[1] Correlation was conducted using Spearman's Rho as data violated assumptions required for Pearson's analysis.

Table 62 showed that stress disconnection and isolation related to living arrangements offered notable correlations when reviewing significant relationships between stress and sexual functioning. This is in line with evidence that serving overseas may offer unique additional strain for some partners coping with dislocation from support networks in unfamiliar surroundings (Blakely et al., 2014). Analysis on soldiers that were separated did not prove to be significant.

Table 63: *Significant correlation between stress and sexual functioning by more than one at-risk category*

| At-risk groups | | n | r |
|---|---|---|---|
| ***More than one at-risk category*** | | | |
| *4 & 10* | *Soldiers that have served for > 20 years who live alone* | 10 | .924** |

**p<.01

Table 63 demonstrated that those soldiers in more than one at-risk category are likely to experience the highest levels of stress which are significantly associated with declining sexual functioning. For example, the combined risk of the groups of soldiers who lived alone and had been serving for over 20 years had a significant correlation between stress and sexual functioning r(8) = .924 (p<.01).

### 9.2.1 ***Regression analysis for stress and sexual functioning***

Further analysis was conducted for those groupings with highly significant correlations, r=>0.800, to understand the proportion of the outcome that could be explained by the modelling.

Table 64: *Regression analysis for high-level stress and sexual functioning correlations*

| | n | r | $r^2$ |
|---|---|---|---|
| ***High-level groups >r=0.800*** | | | |
| *All ranks,* live alone, served 20+ years | 10 | .92** | 0.85 |
| NCO's, live alone | 45 | .65** | 0.70 |
| NCO's, live with partner overseas, male | 20 | .72** | 0.67 |

**p<.01

The bivariate regression analysis in Table 64 showed that 85.3% of the variance in sexual functioning could be attributed to stress for those soldiers that live alone with over 20 years' service.

For NCO's who live alone and NCO's that live abroad with their partners, the numbers were equally significant with 69.9% and 66.6% respectively. These calculations demonstrate the sizeable impact soldier stress has on a person's ability to sexually connect with their partners when they are exposed to isolation or disconnection.

### 9.2.2 ***Subscale - sexual difficulties and stress***

The sexual difficulties subscale specifically addresses the psycho-physiological aspect of sexual functioning. These scores are directly linked to clinically recognised psychosexual concerns, such as desire for sex, discomfort/pain and orgasm or erectile function. Examining the groups that were considered at-risk for stress and sexual difficulty, the high correlation groupings were marginally lower than the broader sexual functioning results.

Table 65: *Correlation between stress and sexual difficulty by at-risk categories*

| At-risk groups | n | r |
|---|---|---|
| ***Relationship pressure points*** | | |
| *1. Soldiers in a relationship <1 year* | 22 | -.03 |
| *2. Separated soldiers* | 8 | .79* |
| ***Disconnection and Isolation*** | | |
| *3. Soldiers who lived alone* | 50 | .56** |
| *4. Soldiers who lived overseas with their partners* | 48 | .54** |
| ***Increased occupational demand*** | | |
| *5. Other ranks aged 26-30* | 19 | .34 |
| *6. Non-commissioned officers aged 26-30* | 32 | .41* |
| *7. Commissioned Officers aged >40* | 71 | .18 |
| ***Life stage transitions*** | | |
| *8. Soldiers that have served 1-5 years* | 51 | .34* |
| *9. Soldiers that have served for >20 years* | 113 | .45** |
| *10. Female soldiers aged 40+* | 12 | .40 |

* p<.05 ** p<.01

Soldiers who were separated, r (6) = .786 (p<.05), who lived alone, r (48) = .557 (p<.01) and participants who live overseas with their partners r (46) = .539 (p<.01), all demonstrated significant correlations between stress and sexual difficulties.

Table 66: *Significant correlation between stress and sexual difficulty by more than one at-risk category*

| At-risk groups | | n | r |
|---|---|---|---|
| ***More than one at-risk category*** | | | |
| *4 & 10* | *Soldiers that have served for >20 years who live alone* | 10 | .82** |

**p<.01

Table 66 showed that soldiers who lived alone at the end of their careers, having served over 20 years, r (8) = .819 (p<.05) demonstrated higher levels of correlation between stress and sexual difficulties. This suggests that participants that are in more than one at-risk category appear to have greater links between stress and declining physical intimacy.

### 9.2.3 ***Regression analysis for stress and sexual difficulties***

Further analysis was conducted for those groupings with highly significant correlations, r=>0.800, to understand the proportion of the outcome that can be explained by the modelling.

Table 67: *Regression analysis for high-level stress and sexual functioning correlations*

| | n | r | $r^2$ |
|---|---|---|---|
| ***High-level groups >r=0.800*** | | | |
| *All ranks,* live alone, served 20+ years | 10 | .82** | 0.63 |
| NCO's, separated | 6 | .90** | 0.75 |

**p<.01

Soldiers that live alone with over 20 years' service demonstrated a significant correlation between stress and sexual difficulties. For this group, bivariate regression analysis showed that 63% of the variance in sexual difficulties could be attributed to stress. NCO's who were separated from their partners showed an adjusted r of 75.2%. Whilst it is accepted that this does not necessarily note causation, it does indicate a strong correlation between these two factors. A useful observation for understanding behavioural response to soldier stress.

### 9.2.4 ***Subscale - sexual partnership and stress***

Sexual partnering is a sub-scale looking specifically measured by the relational aspect of sexual functioning. This included areas such as emotional connectedness, compatibility and partner balance of desire.

Results for sexual partnering produced varying results in comparison to the sexual difficulties aspects of the measure.

Table 68: *Key groups demonstrating high correlations between stress and sexual partnering*

| At-risk groups | n | r |
|---|---|---|
| ***Relationship pressure points*** | | |
| *1. Soldiers in a relationship <1 year* | 22 | -.12 |
| *2. Separated soldiers* | 8 | .28 |
| ***Disconnection and Isolation*** | | |
| *3. Soldiers who lived alone* | 50 | .46** |
| *4. Soldiers who lived overseas with their partners* | 48 | .63** |
| ***Increased occupational demand*** | | |
| *5. Other ranks aged 26-30* | 19 | .49* |
| *6. Non-commissioned officers aged 26-30* | 32 | .25 |
| *7. Commissioned Officers aged >40* | 71 | .26* |
| ***Life stage transitions*** | | |
| *8. Soldiers that have served 1-5 years* | 51 | .36* |
| *9. Soldiers that have served for over 20 years* | 113 | .51** |
| *10. Female soldiers aged 40+* | 12 | .25 |

* p<.05 ** p<.01

Groups with high levels of stress-associated difficulties, separated soldiers for example, showed little relation between stress and sexual partnering r (6) = 0.291 *ns* versus r (6) = .786* (p<.05) for stress and poor sexual functioning. This suggested that there are groupings within the data where relationship connectedness is less impacted by stress than more physical sexual functioning.

This analysis continues to support the findings from the thematic analysis that transitioning soldiers; whether that is a life stage, significant geographical move or career change, demonstrated higher correlations between stress and sexual contentment.

Table 69: *Regression analysis for high-level stress and sexual partnering correlations*

| | n | r | $r^2$ |
|---|---|---|---|
| ***High-level groups >r=0.800*** | | | |
| *NCO's,* live alone, served 20+ years | 10 | .877** | 0.740 |

**p<.01

NCOs who lived alone with over 20 years' service showed the highest level of stress and negative sexual partnering correlation. This is not unlike other studies where NCO's have perceived the military to have a negative impact on family (Rowe et al., 2014). Bivariate regression analysis demonstrated that for this group, 74% of variance could be attributed to the relationship between stress and declining sexual partnership.

## 9.3 Q.2: Is stress associated with online sexual activity (OSA)?

In the main, online sexual activity did not present as a clinically problematic issue for soldiers across the total sample. For the total sample, the study showed that self-reported stress has a low correlation with levels of OSA, r(402) =.19 (p<001).

The correlation between stress and OSA were less significant that the correlations between stress and sexual functioning. NCO's aged 26-30, those who live alone and soldiers reaching the end of their career showed the highest levels of correlation that could be considered significant.

Table 70: *Correlation between stress and OSA by at-risk categories*

| At-risk groups | n | r |
|---|---|---|
| ***Relationship pressure points*** | | |
| *1. Soldiers in a relationship <1 year* | 22 | .23 |
| *2. Separated soldiers* | 8 | .32 [1] |
| ***Disconnection and Isolation*** | | |
| *3. Soldiers who lived alone* | 50 | .16 [1] |
| *4. Soldiers who lived overseas with their partners* | 48 | .19 [1] |
| ***Increased occupational demand*** | | |
| *5. Other ranks aged 26-30* | 19 | -.15 |
| *6. Non-commissioned officers aged 26-30* | 32 | .44* |
| *7. Commissioned Officers aged >40* | 71 | -.17 [1] |
| ***Life stage transitions*** | | |
| *8. Soldiers that have served 1-5 years* | 51 | .21 [1] |
| *9. Soldiers that have served for >20 years* | 113 | .10 [1] |
| *10. Female soldiers aged 40+* | 12 | -.33 |

* p<.05 ** p<.01

[1] Correlation was conducted using Spearman's Rho as data violated assumptions required for Pearson's analysis.

Results for the at-risk categories looking at the correlation between stress and online sexual activity was largely inconclusive (refer to Table 70). Non-commissioned officers aged between 26-30 years old were the only subgroup to demonstrate a moderately positive statistically significant relationship between stress and online sexual activity $r(30) = .44$, $p<.05$.

## 9.4 Q.3: Is online sexual activity (OSA) associated with sexually compulsive behaviour (CSB)?

The relationship between sexually motivated internet use and sexually compulsive behaviour is correlated to the level of $r(402) = .56$ ($p<.01$) for the

total sample study (refer to Table 44). Given the amount of published research tabling the link between sensation-seeking, risk and online sexual behaviour, it was not unsurprisingly to see a vast number of key groups with high correlations.

Table 71: *Correlation between OSA and CSB by at-risk categories*

| At-risk groups | n | r |
|---|---|---|
| ***Relationship pressure points*** | | |
| *1. Soldiers in a relationship <1 year* | 22 | .82** |
| *2. Separated soldiers* | 8 | .85** |
| ***Disconnection and Isolation*** | | |
| *3. Soldiers who lived alone* | 50 | .44** [1] |
| *4. Soldiers who lived overseas with their partners* | 48 | .33** [1] |
| ***Increased occupational demand*** | | |
| *5. Other ranks aged 26-30* | 19 | .52* |
| *6. Non-commissioned officers aged 26-30* | 32 | .55** |
| *7. Commissioned Officers aged >40* | 71 | .46** [1] |
| ***Life stage transitions*** | | |
| *8. Soldiers that have served 1-5 years* | 51 | .41** [1] |
| *9. Soldiers that have served for >20 years* | 113 | .49** [1] |
| *10. Female soldiers aged 40+* | 12 | -.15 |

* p<.05 ** p<.01

[1] Correlation was conducted using Spearman's Rho as data violated assumptions required for Pearson's analysis.

Results showed that relationship pressure points in the high risk categories, demonstrated the strongest positive correlations. With the most significant correlation for this key group as separated soldiers r(6) = .85, (p<.01) and soldiers in new relationships <1year, *r*(20) = .82, (p<.01). The age range of 26-30 also presented with high statistically significant correlations once again.

### 9.4.1 ***Regression analysis for CSB and OSA***

In order to measure how the model might work in predicting outcomes, further regression analysis was conducted for significant correlations >.800 (p<.05) for soldiers within the at-risk categories.

Table 72: *Regression analysis for high-level stress and sexual partnering correlations*

| | n | r | $r^2$ |
|---|---|---|---|
| ***High-level groups >r=0.800*** | | | |
| *Soldiers in a relationship <1 year* | 22 | .82** | 0.67 |
| *Separated soldiers* | 8 | .85** | 0.72 |

**p<.01

Bivariate regression showed that for soldiers in a relationship for less than one year, 67% of the variance in OSA could be attributed to CSB. This was marginally higher for separated soldiers at 72%, although group numbers for separated soldiers were low and should be used with caution.

## 9.5 Q5: Is online sexual activity (OSA) associated with feelings of intimate partner closeness?

OSA was found to have a low correlation with sexual partnership, $r(318) = .22$ ($p<.01$) when reviewing the total sample (refer to Table 50). Most of the at-risk categories produced non-significant results.

Table 73: *Correlation between OSA and sexual partnering by at-risk categories*

| At-risk groups | n | r |
|---|---|---|
| ***Relationship pressure points*** | | |
| *1. Soldiers in a relationship <1 year* | 22 | .46 |
| *2. Separated soldiers* | 8 | .31 |
| ***Disconnection and Isolation*** | | |
| *3. Soldiers who lived alone* | 50 | .20 |
| *4. Soldiers who lived overseas with their partners* | 48 | .33 |
| ***Increased occupational demand*** | | |
| *5. Other ranks aged 26-30* | 19 | .05 |
| *6. Non-commissioned officers aged 26-30* | 32 | .33 |
| *7. Commissioned Officers aged >40* | 71 | .15 |
| ***Life stage transitions*** | | |
| *8. Soldiers that have served 1-5 years* | 51 | .12[1] |
| *9. Soldiers that have served for >20 years* | 113 | .27** |
| *10. Female soldiers aged 40+* | 12 | -.04 |

These results showed that online sexual activity and sexual partnering for soldiers who had served for the longest were positively correlated r(111) = .27 (p<.01) although the strength of the relationship was low.

These correlations were not considered high enough for this study parameters to pursue effect size. Only results that were measured as strong were investigated further (refer to Table 12: Strength of correlation for r).

## 9.6 Conclusions of the at-risk quantitative inquiry

Information gleaned from the rerun statistical analysis identified that many of the key at-risk groups demonstrated higher correlations and more significant findings across several key areas. Stress was consistently correlated with impaired sexual functioning with soldiers experiencing isolation or disconnection demonstrating the strongest correlation with high significance levels.

Out of the 10 highlighted at-risk groups, 7 demonstrated significant links between stress and sexual functioning, offering clinical measures of sexual behaviour as a possible indicator for attritional stress and declining resilience. Soldiers in a relationship for less than a year and separated soldier showed correlations that were not significant. The 7 at-risk groups were:

1. Soldiers who lived alone
2. Soldiers who lived overseas with their partners
3. Other ranks aged 26-30
4. Non-commissioned officers aged 26-30
5. Commissioned Officers aged >40
6. Soldiers that have served 1-5 years
7. Soldiers that have served for over 20 years

Female soldiers over 40, the highest group for elevated stress, showed no significant correlations across all the models. This indicated a stress response difference in relation to sexual behaviour when compared to their male counterparts.

Compulsive behaviour stood out as a key variable in determining how soldiers might act out sexually online. With lower norm scores than national averages, there remained several key groups that demonstrated strong links between sexual compulsivity and online sexual behaviour, with notable numbers taking risks online. For these at-risk groups, there were strong correlations between sexual behaviour online and losing the ability to feel close to their partners, particularly for soldiers in relationships of less than one year.

In summary, attritional stress and global sexual difficulties are significantly correlated in this study of higher-risk British Army soldiers. OSA is not considered generally problematic or linked to elevated personal pressures. Sexual compulsivity, not stress, is directly linked to problematic sexual behaviours which also impacted on relational quality.

## 9.7 Researcher reflections

Concluding the results section of the thesis felt like a significant milestone in the study and my personal journey in the field of academia. Data analysis had been a more reflexive process than I anticipated and underlined the notion that the relationship between the researcher and the data cannot be mutually exclusive. From the instruments that were selected to form the survey to the more overtly subjective qualitative elements, my input had perhaps been led by expectations of alpha male soldiers with sexual confidence (including hypersexuality, affairs and excessive porn use) as a critical part of their cultural identity. Yes, compulsivity and OSA were inextricably linked, but they were less of a concern for soldiers than they are for the general populous. This was far from my expectations following the literature review and personal clinical experience.

The findings described an opposing reality, suggesting that emotional numbing and loss of connectedness appeared to be more problematic than extradyadic behaviours or sexual reward-seeking behaviours. Hyposexuality was more prevalent. Satisfaction within sexual experience was impacted by mounting personal pressure. There was compassion and humanness to the results that did not marry with the social and organisational representation of a tough British Army soldier.

All people and all relationships are not the same. As with any large organisation, some people competently cope with stress and other's cope less well. From the data analysis, a picture was emerging of what is important to British soldiers in peacetime with regard to their own strain. Physical, emotional and cognitive symptomology from routine stress is not a personal failing, it is a natural response to global uncontrollable pressures, leading to impaired personal agency. With knowledge and understanding of where that stress load was most emotionally and mentally injurious, change could be considered to reduce the personal harm to wellbeing and relationship stability caused by external stress.

Change was a primary aim for this study. To reduce the numbers of soldiers presenting in therapy with fractured relationships, sexual difficulties and attritional stress. As this element of the study concluded, it began to feel that it

would be able to meet its overarching research question. Sexual response was an indicator of stress, declining resilience and problematic behaviours for some relationships. The next important phase was to understand how best to use this new knowledge.

# 10 Discussion

*"To be totally without stress, is to be dead'* Selye (1978)

## 10.1 Introduction

Emotional and physical disconnectedness caused by stress at work can fracture intimate couple relationships leading to unhappy home lives and distracted soldiers. If problems are not successfully identified and supported, it can ultimately lead to broken relationships, ill health and mental decline. Through this study I have been able to show that there are significant correlations between attritional stress and the sexual functioning of British soldiers. Evidence has shown that those at greater risk of stress, either due to relationship pressures, increased occupational demand, in-service life transitions or isolation, demonstrated the highest correlations between these factors, with up to 85% of variance in sexual functioning attributable to personal stress.

This chapter seeks to locate the statistical and qualitative results of this study within the current literature, in order to generate a constructive conversation on stress and sexual functioning in the British Army.

The discussion will centre on the 6 main research questions and subsequent findings:

1. Is stress correlated with sexual difficulties?
2. Is stress correlated with online sexual activity?
3. Is online sexual activity correlated with sexually compulsive behaviour?
4. Is online sexual activity correlated with loss of desire and sexual satisfaction?
5. Is online sexual activity correlated with feelings of intimate partner

closeness?

6. Does living alone have a higher correlation with increased online sexual activity when compared to other living arrangements??

Conclusions from this discussion will inform the research recommendations.

## 10.2 Is stress correlated with sexual difficulties?

I found that stress is strongly correlated with poor sexual functioning in British soldiers. This indicated that for Army personnel, assessment of sexual function could be an effective marker for elevated stress. It could also inform those soldiers who are not successfully appraising their own stress capacity and therefore guide them to seek the appropriate help.

If a soldier sustained a physical injury to their genitals, the enormity of the damage would be recognised, and a team of medical professionals would swiftly work to correct that damage. Yet, if a soldier is psychologically castrated, through trauma or unsustainable levels of stress, it can go largely undetected. Sexual functioning is important to this group of young, healthy individuals and should be considered an essential part of wellbeing.

It is recognised that serving in the military can place unique pressures on the individual. It is also proven that “stress can have a cumulative effect and repeated experiences of stress do not necessarily increase hardiness” (Webster, 2012, p.126). This section aims to understand the stress experience of soldiers and how personal strain impacts on sexual functioning.

### *10.2.1* ***Sexual functioning as an effective indicator of elevated stress***

I found that sexual functioning is an effective indicator of elevated stress in British soldiers and should be considered by clinicians as a measure of Attritional Stress & Fatigue (ASF) in the 7 key high-risk groups.

Wilcox et al. (2014) found sexual functioning difficulties commonplace in the US military, with over 30% of soldiers reporting erectile problems alone. Whilst this could be considered three times the levels found in the American population; prevalence rates could be explained by differences in the measures. However,

coupled with psychosexual presentations to my clinic in the UK and a recognition that critical roles such as soldiering can be high pressure occupations, there was an expectation that sexual functioning concerns for British soldiers could be above average.

A sexual difficulty can be a stressful experience in itself; however, based on how soldiers describe their experiences, it is much more likely that sexual difficulties are a symptom of stress overload due to the physical and emotional changes associated with ASF. When considering these findings within the context of the dual control model (Bancroft & Janssen, 2000), it could be argued that this elevated stress could dampen the excitatory mechanisms required for healthy sexual engagement. With over 64% of soldiers perceiving their stress levels to be high, this could contribute to the findings that 37.1% of participants were also considered at-risk for poor sexual functioning.

In every healthy relationship, there will be times when sexual connection and intimacy wains (Levine et al., 2003). This is a perfectly normal part of readjustment where there is constant change and heightened stress for both partners (Mark & Lasslo, 2018). However, there are also times when sexual difficulties and unusual sexual behaviour can be a symptom of personal strain that may be overwhelming but act as a useful indicator for clinicians. Soldiers often present to psychotherapy wanting to work on their relationship problems, unaware of the implications of the wider accumulative pressures placed on them.

When a person's stress capacity is overloaded, either due to work or home – or both – then it creates a state of alert where the brain is continually looking for messages, clues or input. That mental state prevents normal processing and thus damages the capacity to connect to others contributing to a "sexual recession and pleasure crisis" which then increases levels of emotional distress (Wise, 2020, p. 1).

### *10.2.2* ***How sexual functioning is impacted by ASF***

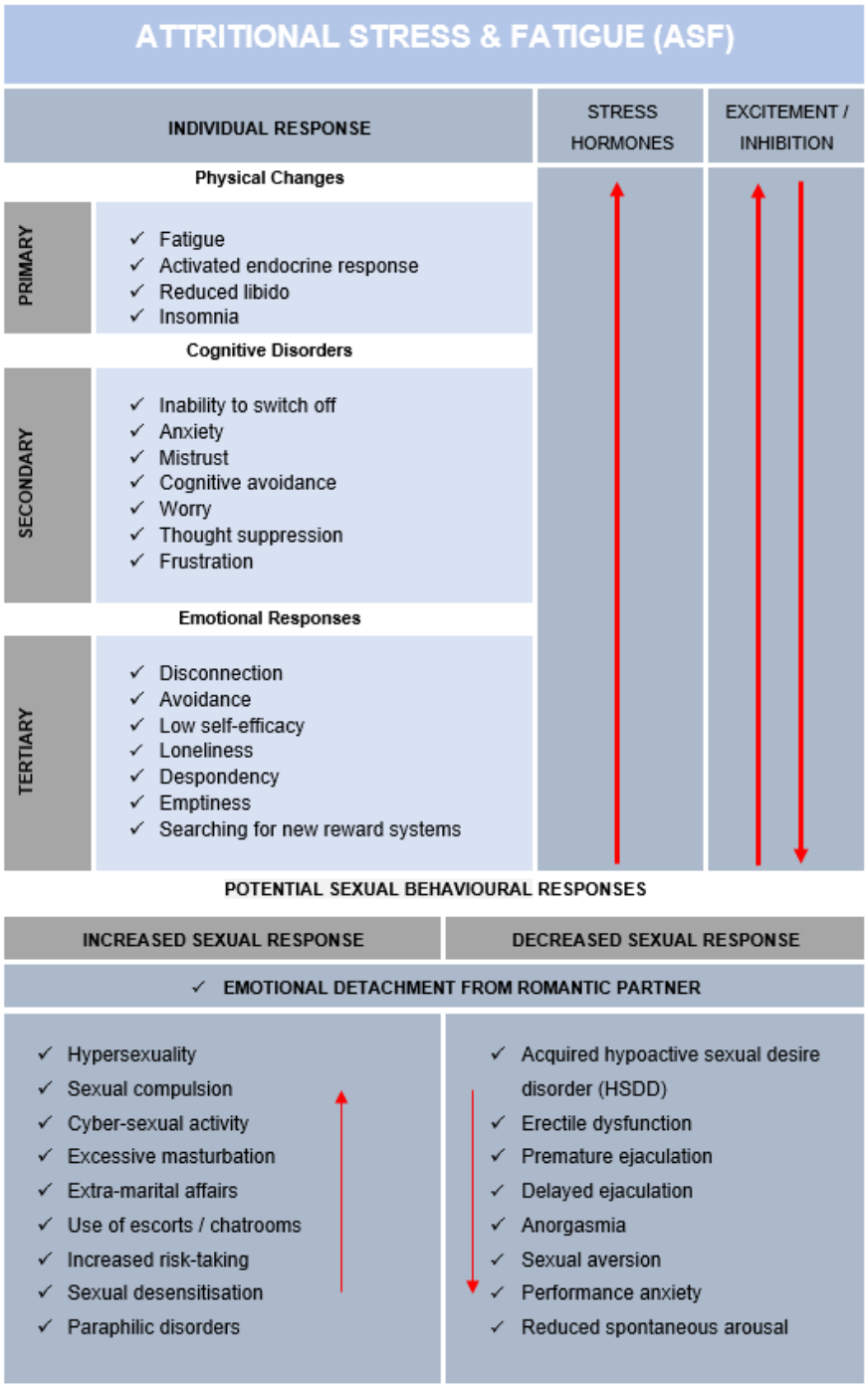
Informed by the Literature Review and findings from this study, individual response to ASF appears to have three core elements: physical changes;

cognitive distortions; and an emotional response. Sexual functioning is impacted by them all (Hamilton & Meston, 2013; Levine, 2002; Morokqff & Gillilland, 1993). Some individuals might use reward-seeking behaviours like sex (or heavy drinking / gaming) as a short-term dopamine-induced hit to improve their mood, some may experience sexual difficulties as a result of the body's mobilised stress response, while others may emotionally detach and avoid intimacy completely – much like the gas / brake pedal description of the Dual Control Model described by the Kinsey Institute (2021). Whilst behavioural responses may be different, they could be symptoms of the same cause. All of which have a potential detrimental impact on the primary relationship.

Along with its significant potential for stress to decrease enjoyment and pleasure, sexual experiences can also sometimes lead to, or be inhibited by, shame, anxiety or guilt (Birnbaum & Reis, 2006). For women, social roles may play a key part in motivations for sex, with more moral costs associated with partner choice, sexual pressure and negatively judged promiscuity (Birnbaum & Reis, 2006; Eagly, 1987; McHugh, 2006; Sweeney, 2014). And for men in predominately alpha roles, a decline in mood or confidence can lead to more self-induced pressure on sexual performance, increasing sexual inhibitions (Courtenay, 2000; Sweeney, 2014). Across both sexes, results from this study suggested that British soldiers under pressure were more likely to emotionally disengage and become low in mood (emotionally and sexually inhibited), than to seek out high-reward excitatory sexual encounters.

Table 74: Maladaptive sexual behaviour in response to ASF defines the physical, cognitive and emotional responses might present in soldiers. As the hormonal response to stress increases, soldiers may either disengage and become emotionally numb or act out reward-seeking behaviours, potentially aiming to improve their mood. Each one of these differing responses could impact on the level of emotional or sexual engagement with their primary romantic partners.

Table 74: *Maladaptive sexual behaviour in response to ASF*




* Informed by Hamilton and Meston (2013); Janssen and Bancroft (2006); Bancroft, Janssen, Strong, and Vukadinovic (2003); Bodenmann et al. (2006); Morokqff and Gillilland (1993) & results from this study.

### 10.2.3 ***The sexual functioning of soldiers***

In isolation, the results for soldier sexual functioning in this study could appear concerning but difference could be attributed to sampling and methodology rather than an increase in prevalence in this population. However, put in context of current published norms and societal changes, they are fairly consistent with other research papers (Bodenmann et al., 2006; Mitchell et al., 2013; Relate, 2017; Wilcox et al., 2014). Figures comparing sexual difficulties against published NATSAL-SF measures, should be viewed with caution. NATAL-3 was conducted from 2010 to 2012 at a time where the profile of sexual activity in the UK was different. More recent research by Relate (2017) and Wise (2020) show that there has been an increased level of sexual difficulties and dissatisfaction since that time.

One further consideration is military culture. Discussion on sexual behaviour is often commonplace between military personnel, in groups that have historically been male dominated (Ministry of Defence, 2015). This has potentially created a permission giving environment where it is less embarrassing to talk about sex. This is definitely evident in this study where soldiers openly talked about ‘not getting home enough to shag my Mrs’ or discussed the more emotional side of physical connection, ‘sometimes I don't feel emotionally connected to my boyfriend during sex’.

Combined with a recent mounting focus on mental health in the military, there has been much education for this group on the importance and value of talking. Despite sex being positively associated with happiness and health, young people are engaging in sex less often (Shpancer, 2020). This could be to do with the socially constructed demands currently placed on individuals, leading to exhaustion and despondency. Termed as the sex-recession, rising numbers of mental health concerns and mood disorders are dampening libido and reducing the desire for sexual contact. Shpancer (2020) adds that the complexities of seeking out sexual engagement are further compromised by the technologies that compete for an individual’s attention, such as gaming, social media and television.

In their research, Badour et al. (2015) found that sexual difficulties were more common among males when compared to females. I did not find that to be the case, with the average female soldier having a higher percentage of sexual concerns. However, findings were nuanced, with certain male categories of soldiers experiencing high percentages of sexual concerns. There were markedly higher results for men aged 31-40 for example, which could reflect the extent of additional stressors around for soldiers of that age; managing young families at a higher rank with self-pressure to further promote whilst managing increased work demands.

Results from this study evidenced that sexual functioning is cumulatively affected by stress. If as Sharma and Sharma (2012) suggest, soldiers are unable to appraise threat due to training that impacts the natural stress response, sexual difficulties and changes in intimacy could be a successful measure of wider problems.

### 10.2.4 ***Stress and biophysical overwhelm***

With two thirds of soldiers moderately or highly stressed, I found that not all soldiers were coping to the best of their abilities. Personnel were more stressed than their civilian counterparts citing several contributing factors, such as, ASF, increased workload which impacted on their work / home balance and a sense that the Army does not care (refer to chapter 7). Aligned to previous evidence looking at the effort-rewards models in the British military (Brooks & Greenberg, 2018), it was evident that under certain leadership, reward in particular (related to more time at home as opposed to financial) had a direct impact on soldier wellbeing. Soldier appraisal and coping strategies are improved by good leadership and healthy relationships. Education could be helpful to inform leaders on their positive or negative contribution to soldier and couple resilience.

It is clear how instrumental a happy relationship can be to a successful service life (Keeling, 2014; Keeling, Wessely, et al., 2017). Add to that a society where the culture and attitude are also changing, there is a need for the support mechanisms to help couples to adapt accordingly. In the last two decades, there

have been increased frequency in deployments, longer deployments, larger death tolls, pension cuts, wage freezes, redundancies, recruitment issues, gapped posts, increased housing costs, discussions around changes to housing entitlement and talk of removing leave during deployments (Nicholls, 2019). The pressure on serving personnel is substantial and stress on soldiers is unlikely to ease in the near future (Hahn et al., 2015).

### 10.2.5 ***Institutional resentment***

Results from my study showed that soldiers and partners blame the Army as a whole for discontentment and unnecessary strain with escalating resentment. Parrish-Meadows et al. (2011) discuss the exceptional demands of what they term *critical occupations*, the roles that are inherent to public safety. These jobs are arduous with a physical demand, long working hours, dangerous or life-threatening duties and unpredictable timetables. Ubiquitous in much of the military literature on family stress, Segal (1986) first debated the pressure applied to soldiers when they aimed to meet the demands of two greedy institutions, the military as well as the family. Results of my study demonstrated these challenges still remain.

For many, these pressures will extend into the family domain causing distress and resentment at home. It is that attritional pressure that impacts directly on the soldiers' ability to cope. This is discussed by participants of my study with accounts of the military, *consuming your life*, resulting in emotional disconnection from loved ones and physical symptomology such as malaise, poor sleep hygiene and low sexual desire. Soldiers also discussed stressors resulting from short notice tasks, the amount of time away from family and not being able to disconnect from work.

These pressures echoed results from research into partner satisfaction by the Army Families Federation (2018). In the Army Families Federation (AFF) study, respondents were concerned about the detrimental effect of a poor work / life balance on their serving partner. Research looking specifically from a spousal perspective of welfare support suggested that partners can feel bothersome

which prevents them from accessing help (Nicholson, 2009). This however, does not appear to negate the pressure experienced by the soldier.

Since 1939 there has only been one year (1968) where the UK military has not been committed to operations. Whether that was the high-profile conflicts of World War 2, Korea, Iraq, or the lesser reported earlier conflicts of Aden and Malaya (Hopkins, 2011), there has been a long-term rolling period of operational demands and commitments. However, since 1939 the difference in the service package and the support to partners and families has changed significantly. Long gone are the days when senior officers' wives were responsible for scooping up the newly married and their young families and nurturing them through the trials and tribulations of *following the flag*.

Following the high profile four rounds of redundancies starting in 2010, there is no longer a sense that this is a job for life and so more wives are choosing not to give up the stability of their own careers to become part of the support system. The UK Regular Armed Forces Continuous Attitude Survey (2016) showed that a large proportion (76%) of service personnel report that they are proud to serve. Although, this has dropped by 11% in the last 5 years.

These changes could have contributed to service personnel feeling undervalued and not cared about, which is potentially damaging to the employee / employer relationship in line with the effort-reward model. Perhaps the military that was once viewed as a monolithic monster, now has to adapt much more quickly and frequently, leaving its people wondering what changes may happen next. Soldiers might wonder where they fit into this new machine that offers less than before but asks them to work harder with fewer resources. These changes will undoubtedly influence morale, motivation and occupational contentment.

When a workforce is disenfranchised; but working at higher pace, with greater financial constraints and lesser stability, it will have an impact on the psychological wellbeing of the staff (Bridger et al., 2013; Pflanz & Sonnek, 2002; Westman & Etzion, 2005). Consider too, the secondary layer of people under

the service personnel that is termed as *the dependant*, the partners and families of those that serve, who also have needs.

### 10.2.6 ***Broken bonds***

If loss of trust and faith causes relationship trauma (Dayton, 2007), perhaps the same applies when personnel have been trained to have a bond with your organisation. For those who seek out risk-taking occupations, there is an excitement and expectation of what that service would entail (Parrish Meadows et al., 2011). For many, this alters when a soldier marries or has children and their priorities change. The disconnect between expectation and changing reality appears to have resulted in a resentment against the Army itself.

Back in 1974, research showed the animosity towards the military when it ordered soldiers to deploy or undertake enforced separation (Busuttil & Busuttil, 2001). This has continued today where soldiers speak of the Army as a negative contributor to pressure. The idea that the Army does not care is affirmed by research in the US. For example, Dolan and Ender (2008) quote soldiers discussing poor command and planning in a culture where it is not possible to say no. These emotive attitudes were marked within the findings where soldiers talked about the *army failing to look after its troops* and feeling *overstretched and underpaid*.

I found that participants talked about being dissatisfied with the Army and claimed, that the Army was *failing its troops* or that the Army *was putting pressure on them*. The challenge of this anthropomorphic view of the military is that it implies that the Army itself is to blame for individual discontentment when in fact, soldiers in my study often described one specific leader having a disproportionate effect and stated that things improved with a change of leader or command.

### 10.2.7 ***Soldier perception of leadership***

I found that soldiers stress appraisal and coping strategies are impacted by good (or bad) leadership. Evidence in my study suggested that there is an additive escalation of stress from continually working at pace with little respite

(the good busy / bad busy model). Participants discussed the sizable impact of a change of leadership recognising how management can either be a conduit for personal development or a contributor to wellbeing decline. The military recognises that mounting pressures can lead to psychological ill health (Ministry of Defence, 2016) and also acknowledge that its people are its most important asset, yet soldiers report the sizeable impact a change of leadership can have to morale.

In my study, soldiers were clear that they do not fear hard work. They do, however, report resenting working to deliver, what they consider to be unnecessary or mundane tasks, when it is perceived to needlessly separate them from their families and cause difficulties at home. The hierarchical structure and follow orders without question culture, misses the fundamental concept that leaders can be an effective resource for soldiers as well as contributing to the effort versus reward perspective (Martins & Lopes, 2012). Bartone (2006) spoke candidly of how leaders can help soldiers to make sense of their world and directly contribute to resilience.

The importance of belonging is crucial to identify and unit cohesion (Baumeister & Leary, 1995; Bryan et al., 2013; Du Preez et al., 2012). But what happens when you start to resent your superiors and do not want to belong anymore – that in itself is a relationship fracture that can cause resentment, lack of faith and identity uncertainty (Baumeister & Leary, 1995).

Finnegan et al. (2011) note that for some small units, leadership and organisational resources can support wellbeing and truly foster the sense of belonging and the support that attracts. Interesting to note that the small units where soldiers and their partners felt well cared for and valued, did not feel stigmatised or considered weak for needing that support.

### *10.2.8* ***Tempo***

In many studies, work overload has been described as the most significant contributor to stress (Bridger et al., 2013; Brooks & Greenberg, 2018; Pflanz & Sonnek, 2002). Increased tempo and nights out of bed are an unsophisticated measure of the pace of current military life and therefore impact on the individual

should be considered more carefully at a local level. Whilst some increased role and workload may positively impact on soldier performance in the short-term, it is also recognised that prolonged increase in pressure can result in negative health outcomes (Thomas, 2014). Results from my study showed that for British soldiers, relationship pressure points mostly occurred alongside work and life struggles, loss of sexual desire, a failing capacity to cope with mounting pressures and partner discontentment. For soldiers in transition, those global stressors displayed greater sexual concerns (refer to chapter 9). NCO's who had recently separated had one of the highest levels of correlated sexual and stress behaviour, with over 70% of sexual difficulties attributed to stress.

Studies have shown that almost 20% of service personnel in a low-tempo environment will score highly for common mental health disorders in a general health survey (Pinder et al., 2010). However, the terminology currently used within the literature is not a true reflection of the current pace of military life. Tempo appeared to be linked to combat, suggesting that if the British Army were not at war, that the work of soldiers would be less fast paced. Evidence within my study would suggest that whilst the threat-to-life and the high number of deployments have been removed, the pace of working in this smaller Army has never been more demanding.

As part of modern Army doctrine, the model of small wars explained how the psychology of soldiers is critical to managing modern militaries where individuals or small groups of soldiers are dispersed to support specific missions. Different to mass deployment of troops, small teams rely more heavily on their individual strength and resilience to meet the changing demands of their leaders (United States Marine Corp, 2009). This is a perhaps a more accurate reflection of what is termed as a period of low intensity conflict, recognising that the pressures may be different, but soldiers describe working hours, persistent demands and a level of work pressure that would not – and perhaps should not - be considered low in tempo (Brooks & Greenberg, 2018; Frone & Blais, 2019; Sharma & Sharma, 2012).

There are times when the workload cannot be balanced with familial demand and stress is problematic (Burrell et al., 2016; Higgins et al., 2010; Segal, 1986).

In my study, I found that there acute pressure points for soldiers were being in a period of transition, either starting or ending a relationship or beginning or ending their military careers.

## 10.3 Is stress correlated with online sexual activity (OSA)?

I found that the relationship between stress and online sexual activity (OSA) was statistically significant, but not strongly correlated for most soldiers. In times of increased stress, military personnel have been observed to seek out sexually rewarding behaviours as a quick fix to improve mood (Porter et al., 2017; Richard & Dunn, 2005). OSA can satiate that need for reward by offering quick dopamine bursts and enhanced sexual arousal (Park et al., 2018). Within the literature, there was discussion surrounding risk-taking and high STI rates (Harbertson et al., 2019; Thandi et al., 2015; Thomsen et al., 2011). This evidence, coupled with the number of soldiers presenting to psychosexual therapy with risk-taking sexual behaviours, created an expectation that problematic OSA rates would be high for the group in my study. In reality, the results suggested that the majority of soldiers reported low-risk levels of OSA. A lower proportion than published figures on national averages (Delmonico & Miller, 2003). However, nearly 85% of soldiers described using the internet for sexual activity, proving that non-problematic OSA is commonplace.

Research by Cooper et al. (2002) evidenced that 29.4% of people report using OSA to cope with stress, with men 31.6% showing higher rates than women 17.3%. Yet, in my study, stress was not strongly correlated with OSA behaviour although the profile of OSA usage between the sexes was statistically different. Cooper et al. (2002) also found that men dominate the OSA statistics with over double the hourly usage per week. This aligns across many risk-taking behaviours, smoking, drinking drug where men tend to score more highly than women (Verrall, 2011).

I found in my study that almost all women (97.6%) were considered low risk OSA users. For female soldiers, there may be life-stage implications, moral conscience, having children or lack of availability and time that could inhibit online sexual activity (Barrada et al., 2019; Squirrell, 2011). This was much

more in line with the findings of my study which ascertained that men make up 100% of high-risk cases with female reporting lower OSA use in general. This was similar to results by Squirrell (2011) who evidenced a different behavioural profile between men and women.

Given the known risk-taking behaviours of soldiers (Breivik et al., 2019) and the high prevalence of internet use for sexual purposes, results for problematic OSA were lower than expected. Mankayi (2008) argues that factors such as wearing a uniform or working with weapons, could create a masculine association with power. If this hypermasculinity feeds into the discourse that they are mentally robust and unbreakable, soldiers may be less likely to admit that they lose control (SCS question 5: I sometimes get so horny I could lose control) or are demonstrating weakness (SCS question 8: I feel that my sexual thoughts and feeling are stronger than I am). More research is required to understand if social desirability impacts on soldiers in sex research of this kind.

### 10.3.1 ***Pathologising behaviour***

Soldier online sexual behaviour should not be pathologised by clinicians or soldiers. Soldiers may enjoy a varied online sexual repertoire, but that does not automatically make it problematic. My study demonstrated that soldiers broadly want to be with people, they are predominantly confident, social bonding creatures who report wishing to engage with others in person, rather than to seek out online pleasure.

The literature suggests that OSA may be pathologised by individual value judgements and therefore the perception of use, from both the user and clinicians could be impacted by personal scripts or what has been historically considered unhealthy practice or taboo (de Alarcón et al., 2019; Duffy et al., 2019; Keane, 2016). OSA should only be considered problematic if it is damaging to themselves, their partners or national security. Individuals have varying sensibilities and accepted levels of sexual behaviours based on their own beliefs and experiences and should be allowed the freedom of personal choice, providing it does not detrimentally impact on others (Barrada et al., 2019). History has shown prejudice in the development of sexual medicine

(Bancroft, 2005) and it is therefore crucial that medical professionals do not allow out-dated norms or implied rules to inform diagnosis or treatment of sexually related concerns.

The experience of soldiers presenting to sex therapy combined with the frank and honest participant data in my study would suggest that soldiers want to talk about sexual concerns and will do it unashamedly. This makes them ideal candidates for successful treatment but can be derailing for clinicians who are not as comfortable working with this subject matter (Dyer & das Nair, 2013; Gott et al., 2004).

### *10.3.2* ***OSA and national security***

OSA in general was commonplace (85%), which has implications for national security. Awareness of vulnerability is vital to reduce the number of soldiers exposed to cybercrime. Whilst data on illegal activity was not specifically related to the main research questions, findings from my study were considered important to this discussion, both in terms of elevated stress, risk to relationships and matters of security. When considering the Triple A effect, it is important to recognise and educate OSA users that the third A, anonymity, is a myth. Every mouse click on the internet leaves a footprint which can be replicated and potentially used for harm (Sardá et al., 2019).

In the US, criminal investigators have urged caution for the Army community regarding online sexual extortion. In the US in 2019, 450 soldiers fell victim and were blackmailed for more than $560,000.00 (Menzie-Kwakye, 2019). Dubbed at *sextortion*, the Department of Defence (DoD) are so concerned that they have produced literature to inform personnel of the dangers of online sexual activity and cybercrime (Department of Defence, 2019). With a steady income and a propensity to take-risks, soldiers are a known target for this type of corruption and there is mounting concern that 'U.S. officials fear that foreign enemies could exploit the same tricks to obtain sensitive information and compromise national security' (Myers, 2016, para. 3).

In the UK, the National Crime Agency (NCA) reported 1,304 cases in 2017 with an increasing number of British military personnel as victims. This figure is likely

to be much greater, given the embarrassment and shame connected with admitting extortion in this manner (National Crime Agency, 2017). There is a need for greater education in the dangers of OSA, particularly around socially-motivated behaviours that increase the risk of exposure to crime. In addition, the analysis demonstrated that 6% of soldiers discussed accessing illegal material online, although it was not clear if that was by accident or intentional. These figures highlight a growing trend that warrants greater awareness for the military community, both in terms of disconnecting from their partners and being vulnerable to cybercrime.

## 10.4 Is online sexual activity correlated with sexually compulsive behaviour (CSB)?

I found that soldiers reported low levels of damaging online sexual behaviour and sexual compulsivity in the British Army, with the majority of service personnel reporting experiences below the general population average. This research did not differentiate between paraphilic or normophiliac behaviours and made no assumptions on personal sexual preferences, but it is recognised that whatever sexual activity individual soldiers had chosen to engage in over the previous 12 months, very few believed it had negatively impacted on their daily lives. It is likely however, that soldiers will only seek help once the behaviour begins to impact on the primary relationship (Howard, 2007).

I found that OSA was strongly correlated with compulsive sexual behaviour (CSB) for male soldiers. The link between frequent online sexual behaviour and compulsion is not unsurprising given there are an estimated 40 million adult users of internet porn in the US (Grov et al., 2011). Adult website Pornhub reported over 42 billion visits in 2019 with the UK as the third biggest user, behind America and Japan (Pornhub, 2019). Despite the vast number of users however, it does not automatically denote pathology (de Alarcón et al., 2019) with the majority of users reporting positive effects (Pekal et al., 2018). The most at-risk users define two main motivations for OSA, either to relieve stress or to improve mood (Cooper et al., 2004).

For those small number of soldiers reporting high levels of OSA, my study showed that there was a greater chance that those practices will become compulsive with OSA accounting for 31% of the variance in CSB. For the 9 of the 10 most at-risk groups as highlighted in Phase 4 (refer to chapter 9), the influence of CSB on online sexual behaviour was distinctly higher. Previous published studies show the compulsive sexual behaviour of soldiers at a much higher level than my study. For example, post combat veterans using Minnesota Impulsive Disorder Inventory (MIDI), evidenced a prevalence of 16.7% (Smith et al., 2014) with Smith (2014) quoting that 20% of the US military population could be living with a pornography addiction.

I found that prevalence rates for soldiers were at 6%. This matches US figures reported by Carnes (1991) and aligns more closely to other published research showing that OSA behaviours, such as pornography use, are not intrinsically problematic per se, but can develop into damaging compulsions for a few (Binnie & Reavey, 2019; Daneback, Månsson, & Ross, 2012; Delmonico & Miller, 2003). Patterns of OSA behaviour suggest that the longer a person is online, the greater the chances of developing CSB (Cooper et al., 2000; Griffiths, 2012; Hermand et al., 2020). Elevated OSA has been associated with a wider personal effect, with 9% reporting that OSA usage had impacted many brackets of their lives, including occupational, personal and social areas (Cooper et al., 2000).

In my study, characteristics such as the sexes did evidence a difference in behaviour, and for women, there was no correlation between OSA use and CSB found. This sexes disparity was seen in much of the other literature looking at OSA usage and susceptibility to CSB (Griffiths, 2012; Grov et al., 2011; McBride et al., 2008; Squirrell, 2011). Another key characteristic of high OSA use was risk, of particular interest to my study on soldiers. Such risks are proven to damage current or future relationships, personal state of mind (self-esteem for example) finances, and recreational activities (Liu et al., 2020; McBride et al., 2008). In a study sample population with high levels of general sexualised behaviours (Ministry of Defence, 2015), consideration must be given to whether

the overtly sexualised environment might normalise higher levels of OSA without consideration of its correlation with CSB.

It is important not to confuse high OSA usage with compulsive behaviours (Fong, 2006). Self-reporting can be misleading as what is considered to be excessive or damaging is subjective and can differ from person to person with psychological concerns such as loneliness being mediated by it (Binnie & Reavey, 2019). What is known, is that sexual compulsions are "usually associated with significant distress, feelings of shame and psychosocial dysfunction" de Alarcón et al. (2019, p. 90) whereas non problematic OSA use can be complementary to peoples offline activities (Döring, 2009; Griffiths, 2012; Grov et al., 2011).

### *10.4.1* ***OSA and risk***

Mankayi (2008) discussed the association of the hypermasculine military context being a facilitator of high-risk sexual practices and unsafe sexual behaviour. This was backed up by other research that looked specifically at risk, trauma and mood disorders in relation to addictive behaviours (Richman, 2017; Smith et al., 2014). In this study, I found no evidence of high levels of risky sexual behaviours. However, of the 6% of soldiers who were at-risk for problematic CSB, all of them were male, suggesting a difference in sexed behaviour. These figures reflect a potential of up to four and a half thousand male soldiers who could be engaging in sexual behaviours that were clinically compulsive. Results by Smith et al. (2014) reviewed the possibility of CSB being a useful avoidant coping strategy for soldiers to manage trauma. This could potential infer that those soldiers struggling with injurious OSA or CSB could be masking a wider psychological problem.

Liu et al. (2020) found perception is linked to behaviour with individuals less likely to engage in OSA if they perceived the risk of damage to their primary relationship to be high. As with this research, female risk-taking judgements could have been informed by their social role perception (Eagly & Wood, 2012; Koenig & Eagly, 2014) and thus did not report engaging in OSA in the same numbers, hence less likely to develop CSB. This offers the consideration that if

soldiers, by culture, are educated to defy risk, then is their ability to appraise it compromised, leaving them free to use OSA without fear of reprisal or shame.

## 10.5 Is OSA correlated with loss of desire and sexual satisfaction?

Systemic reviews on OSA claim that increased online sexual pursuits are linked to increased psychopathology, mood disorders and addictions (Castro-Calvo et al., 2018; Squirrell, 2011).

### *10.5.1* ***Sexual desire and satisfaction***

There is evidence that online sexual activity can both positively and negatively impact on primary partner relationships (Castro-Calvo et al., 2018). For some, it is a platform for which to explore their sexual expression (Grov et al., 2011). In my study, I found that OSA was not strongly correlated with reduced libido suggesting online practices do not reduce the desire to seek out more sexual encounters. Despite evidence for OSA being a causal factor for sexual difficulties such as erectile dysfunction (Barrada et al., 2019), for British soldiers the compulsive nature of their OSA profiles were very low and unproblematic and not a direct contributor to decreasing libido.

Conversely, I found that OSA was strongly correlated with a decline in sexual satisfaction suggesting that as OSA use increases, connectedness to the primary partner wains. These findings could be related to previous research which suggested that most online sexual behaviour is solitary and those experiencing higher out-of-control behaviours displayed greater sexual excitatory levels with a heightened fear of performance failure (Bancroft et al., 2009; Delmonico & Miller, 2003). The need to seek out sex is present, but individuals could potentially lack the ability to enjoy it without fear of failure. There is further evidence that elevated OSA creates psychosexual difficulties stemming from body dysmorphia and unrealistic expectations (de Alarcón et al., 2019).

### 10.5.2 ***Human connectedness***

I found that soldiers discussed a need to improve their primary relationships with little discussion on OSA behaviour, offering more evidence of a soldier's primary need for healthy human attachments. However, participants were only asked to comment on stress or sex and were not specifically asked about OSA or CSB behaviour. I did find that soldiers appeared to want to have in-person connected relationships as opposed to isolated OSA. This may be supported by the social culture underpinning military life. Soldiers perhaps have a greater level of confidence to go out and successfully find those kinds of sexual encounters in person. Soldiers also have a high disposable income which affords a greater frequency for social settings.

Add to that the alpha male culture, with promotional messages like the *confidence for a lifetime* media programme that supports self-assurance (Cooper & Sables, 2020). The Army tells its people that it will teach them confidence, strength and resilience. The military symbolises many heavily male virtues such as daring, courage and valour (Mankayi, 2008). All key skills that are required in the often-difficult arena of face-to-face mating.

### 10.5.3 ***The future of OSA***

Online sexual activity is moving into its second wave where virtual relationships will be more commonplace (Knapton, 2017; McArthur & Twist, 2017). These types of OSA may have a different psychological effect on soldiers and warrant more research. The Triple A concept has been picked up by other researchers, Young (2006) and Ballester Arnal et al. (2010) claiming it as a contributing factor for those who were psychologically at risk for compulsive behaviours. Young Army recruits and junior ranks have grown up with increased access to social media, smart phones and cyber-activity. That familiarity with online activity combined with long periods away from home, affordability and access, then the number of OSA users is highly likely to grow (McArthur & Twist, 2017).

McArthur and Twist (2017) speak candidly about the rise of what they term as Digisexuals, the emergence of individuals who consider that OSA is intrinsic to

their sexual identity. What is known today about technology-mediated sexual activity is now considered to be the first wave with evidence that the future second wave will offer a more advanced sexual experience for users with less need for human contact. This includes virtual reality multiple partner experiences and sex robots engineered to provide bespoke services for individuals.

If primary relationships are substituted by virtual encounters or high-risk quick reward experiences, then an individual's sense of belonging is severed, presenting risk of seclusion, loneliness and depression. Strong relationship bonds impact on emotional patterns and on cognitive processes. Thus, the absence of intimate attachment is directly associated to detrimental effects on healthy adjustment and well-being (Baumeister & Leary, 1995).

For clinicians and employers of personnel exposed to long periods of isolation, risk and an already high-use OSA, then futuristic technologies will have to be considered in terms of soldier wellbeing and national security. Reports suggest that these technologies are atypical or even absurd and offensive to some (Knapton, 2017; "Switch on the digisexuals," 2019). As their sophistication and development continues to grow, academics urge greater education on the second wave impact on healthy intimate partner attachments (McArthur & Twist, 2017).

### 10.5.4 ***Gaps in psychoeducation for clinicians***

Looking at a single line items within the NATSAL-SF measure, I found that almost a fifth of soldiers reported seeking help for sexual difficulties in the last 12 months. This suggests that clinicians need appropriate training on psychosexual concerns to enable effective and confident sexual functioning assessment. When interviewing soldiers on marriage, Keeling (2014) found that male soldiers were able to talk about their partner's emotions with empathy and understanding; however, when they discussed their own emotions, they answered with bravado, sarcasm or humour. This could be attributed to the masculine culture within the military (Mankayi, 2010).

Within the qualitative element of Keeling's study, soldiers discuss their wives and their relationships in honest detail but did not refer to sex or physical intimacy. This raises the question about permission giving and the invisible barriers that might stop personnel actively talking about how pressures impact on their sex lives (Dyer & das Nair, 2013; Gott et al., 2004). Within my study, with the freedom to explore their sexual satisfaction and behaviour, there was a sizable response with over a third of soldiers volunteering intimate information on their experiences and many expressing thanks for having the platform to do so.

Sexual difficulties are not routinely discussed as part of physical or mental health assessments within the Military (Nunnink et al., 2012). This is not an unusual phenomenon as there is a UK wide barrier to sexual functioning discussions in healthcare. Often the reasons for not discussing sex relates to clinicians' perceptions of what those conversations may lead to. (Dyer & das Nair, 2013); Gott et al. (2004) describe a nervousness of 'opening a can of worms', a fear of offending patients, personal embarrassment or skills deficiency being blocks to early screening. If professionals struggle to manage healthy discussions, then it will undoubtedly increase the stigma of help-seeking in this area.

## 10.6 Is OSA correlated with feelings of positive sexual partnering?

I found that there was a positive correlation between OSA and sexual partnering for men, although the strength of that correlation was low. This suggests that as discussed widely in the literature, some people find OSA is non problematic and potential a method in which to complement their current sexual experiences (Daneback et al., 2012; Shaughnessy et al., 2011).

### *10.6.1* ***Attachment***

OSA is not problematic for most soldiers with only 2% in the very high-risk category. Evidence suggests that this is likely to be attributed to the social and bonding nature of soldiers (Finnegan et al., 2011) who prefer to seek out human contact. Soldiers openly discussed their extra-dyadic behaviour explaining that

acting out online was an escape or distraction from mounting stress and that, at times, masturbation would replace sex with their partners. These stories were limited though with most soldiers preferring to improve their primary partnered relationships.

Attachment is vital for humans to thrive and secure social contact is central to lessening fears of threat and vulnerability (Hawkley & Cacioppo, 2010). What happens when relationships begin to fail? Relationship pressure points were evidenced within previous studies recognising that certain life milestones, such as having young children, new, fractured or broken relationships intensify individual pressures and stress.

Whilst active duty can be both a positive and negative contributor to relational quality (Keeling et al., 2015), there is a recognition that there are certain points where personal or familial need and occupational need are intensified to a level that personal capacity is unhealthily over-stretched (Segal, 1986; Sharp, 2016). Results for female soldiers were not statistically significant suggesting a differing experience for each of the sexes and lower levels of relationship disruption.

## 10.7 Does living alone have a higher correlation with increased online sexual activity when compared to other living arrangements?

I found that those exposed to more time alone are at greater risk of high stress. For example, soldiers who have served over 20 years and were single, OR's who lived alone and separated soldiers all demonstrated the greatest levels of distress. Given that isolated sexual activity is the most common for problematic behaviour (Delmonico & Miller, 2003) and the evidenced links between OSA and compulsive behaviours, long term stress and isolation were measured to establish correlation.

There was no evidence from the results of my study that living alone contributed to online sexual behaviour. Of those that lived alone, 16% were measured for problematic OSA which was similar to the 15.7% average for the study. Aside from personnel divorcing or separating, soldiers who lived alone did report the

highest levels of stress across all living arrangement groups (refer to chapter 6).

Historically, soldiers would leave their hometown to move to their duty station and spend time socialising with their peers and meeting people in the local vicinity. With the advancement of technology, personnel are able to stay more connected to their old friendship groups, allowing long-distance relationships to be nurtured more readily. This has added to the normalising of experiencing intimate relationships online.

This change has some considerations in terms of the cohesion and social support required by young soldiers. Recognising that there has been a move to single living accommodation and a focussed attempt to reduce alcohol intake through more contained socialising, these well-meaning policies have imposed further segregation which may impact on how group resilience is fostered. Together this has the potential for more soldiers to cope with the stresses and strains in isolation.

The work of Hawkley and Cacioppo (2010) suggested that separation can alter the way emotion is managed. Without the social connectedness, self-regulation capability is compromised. Individuals are less motivated, experience greater sleep debt and increased cortisol which is known to inhibit sexual desire and response. This deregulation of the stress response was demonstrated in a number of groups, including those who weekly commute from work to home.

This at-risk group may be impacted by the process of continual emotional re-integration and the additional cost of travel. Both soldiers and their partners may find sexual contact difficult following frequent separations with intimacy needing to redevelop, potentially causing relationship struggles, feelings of rejection and misunderstandings (DeCarvalho & Whealin, 2012). Glotzer (2007, p. 11) agreed, and considered how “changing the fundamental ways in which marital relationships and family life are organized is for most families difficult, exacting an immense toll in stress, anxiety, and the quality of relationship”.

### *10.7.1* ***Dislocation and Isolation***

Whilst reducing separation is a nice ideal, it is not necessarily that simple given the political and strategic objectives of the British military, coupled with a reducing workforce. Furthermore, it is not simply the separation of soldiers from their families, but also the family's separation from their social systems. I found that soldiers who lived alone or those based overseas with their partners were identified as at-risk for elevated stress and relationship fracture, including greater correlations between those stresses and sexual functioning.

Where isolated soldiers and weekly commuters struggled with stress and tension in the work / home balance, soldiers who deployed on lengthy 6-month tours fared much better. This corresponded with research into common mental health disorders which showed that soldiers who were deployed had lower General Health Survey (GHQ-12) scores, than those non-deployed personnel (Hunt et al., 2014). This clearly showed the stress benefit of a mission specific goal versus managing multiple demands. Generally, the partners of deployed personnel are well supported by the Army's welfare system. Soldiers who experience intermittent separation are not offered the same support as for a 6-month tour of duty, but are shown to have greater risk of psychological downfall.

## 10.8 Being a female soldier in 2021

I found that female soldiers had a different stress and sexual behavioural profile. It is vital to seriously consider difference across the sexes and how clinicians screen for problematic behaviours in women.

My study showed there is a clear difference for the sexes between sexual functioning and stress in the Army, which aligns with other data suggesting that women present with higher stress and depressive symptoms than men (Bray et al., 2001; Defence, 2019). When researching female soldiers' sense-of-self and the shaping of identity through their careers, Davis (2012) found that personnel were deeply aware of the difference in gender, often holding themselves to higher standards as they sought respect from their male counterparts, refusing to settle for the benchmark expected by their gendered social roles.

Being a female soldier is a major risk-factor for psychological ill health in recent research (Christiansen & Hansen, 2015; Jones et al., 2006). Additional factors outside of the job itself, contribute to stress considerations for female soldiers. Evidence suggests that women have a greater risk of sexual harassment and sexual assault within the military and indicate that women display higher levels of mental health disorders (Berg & Rousseau, 2018; Maguen et al., 2011).

Evidence from my study indicates that men and women might experience stress and sex differently. The work of Basson (2000) argued that a women's sexual response was based in psychological outcomes, as opposed to biological. Furthermore, the studies of Balhara et al. (2012, p. 6) explain how female stress response is grounded in "attachment care-giving processes" which is known to buffer the sympathetic nervous system response in a different manner creating a different physiological and emotional reaction. These differences are key to mental health behaviours and could support more targetted clinical assessment and sex-specific interventions. More research on the differences between the sexes in relation to military service is needed.

### 10.8.1 ***Increased risk***

Women in the military are highlighted as at increased risk for psychological concerns with over 5% of female personnel presenting to MoD mental health services in 2019 (Defence, 2019). This figure does not include those people that sort help outside of the chain of command. Yet research into both the female stress response and sexual experience is limited. Female soldiers over 41 reported the most serious levels of stress. This corresponds with the emergence of the do-it-all generation of women, who are trying to balance their careers with busy families and growing children whilst also potentially caring for aging parents (Bingham, 2015) and concurrently managing the pressure of working in what has historically been considered a male environment. Whilst the Army is working very hard to promote equality across the board, it is perhaps missing a critical element which is how the psychology of difference impacts on mental health and wellbeing. Specific groups may require different leadership styles, psychoeducation and mental health support.

Women have increasing opportunities in the workplace, including within the British Army, but still have to manage the revolution of career equality alongside traditional gender roles. I found that female soldiers openly discussed feeling overwhelmed and taking their stressors out on their partners, with very little energy left for sexual contact.

Although women juggle many stressors, family stress was unlikely to impact on work performance, according to Bray et al. (2001). Suggesting that the predominately female skill of multitasking, may support resilience when managing the global pressure of work and family life. Evidence also suggested that female soldiers had a healthy approach to emotional management, effectively utilising the support of other female soldiers and their social support systems (Davis, 2012). With an increasing number of women moving into combat roles (Woodward & Duncanson, 2016), more research is required to understand the psychological impact of women working in a more life-threatening environment, questioning further the drive to push through the fight / flight stress response and its implications on threat appraisal and stress management.

## 10.9 How soldiers successfully manage stress

My study also sought to identify areas where there were successful stress appraisal and coping strategies. This information would be used to support recommendations for education and change in the wider military.

There is a body of evidence that can demonstrate the demands of the family and the Army cause an additive effect on soldier stress and wellbeing (Anes et al., 2012; Segal, 1986). Work-family conflict is a known contributor to poor wellbeing whereas strong couple resilience is a protective factor. Relationship status was an important classification to identify where soldiers were not only struggling with pressure and sexual connection, but also where personnel were managing the work / home dyadic demands effectively. Results from my study showed that relationships do forge healthy support systems with those soldiers able to rely on their partners. Many discussed how mutual support creates healthy coping strategies.

Most research centres on failing mental health yet British soldiers have been found to manage their workload demand and global stressors well (Bowen & Martin, 2011; MacManus et al., 2014). However, my study has polarised service personnel experience, between those that are generally content and those who demonstrate deep individual unhappiness and overwhelm. This may be influenced by their coping strategy styles and threat perception.

As defined by Bray et al. (2001) and later adopted by Bridger et al. (2013 p.1637), coping strategies are either defined as “approach or avoidant”. Approach strategies are problem focused (exploring the issue, making plans) or emotion focused (talking to a friend). Avoidant strategies offering a maladapted solution which has historically been a concern in the military, such as heavy drinking or gaming. Soldiers displaying lower stress talked of using many more problem and emotional focused choices, exerting control on the areas of their lives where they felt there was some flexibility. If an individual feels powerless, they can begin to accept the narrative and often stop looking for other perspectives (Cecchin, 1987). Soldiers who sought out power and control showed higher contentment and relationship satisfaction.

### *10.9.1* ***Personal agency***

I found that positive empowerment and control were a positive contributor to effective stress appraisal, coping and good sexual functioning. Cramm et al. (2018) qualify the value of personal traits such as self-esteem, personal agency and positive perceptions as characteristics that contribute to building healthy resilience. The capacity to exercise control and planning is pivotal to decreasing perceptions of work stress and contributes to the development of healthy coping responses (Dolan & Ender, 2008).

Self-efficacy and personal agency are characteristics that preserve wellbeing and contribute to resilience (Cramm et al., 2018; Kent et al., 2014). Bartone (2006) discussed personal hardiness and a characteristic which supports that life has value and is meaningful and is enhanced by choosing our own futures.

Within my study, I recognised the work of Bandura (2011, p.12) who astutely claims that “people do not live their lives in social isolation. Many of the things

they seek are achievable only by working together. In the exercise of collective agency, they pool their knowledge, skills, and resources and act in concert to shape their future". This reflects my interpretation of systemic resilience (refer to Figure 30). A recognition that with so few decisions within their personal control, soldiers have to rely on proxy-agency, allowing others with more knowledge and resources to influence their outcomes. In this environment, personal resilience therefore cannot be a siloed capacity, it is systemic.

### 10.9.2 ***Robust institutional support***

The Army has put mental health firmly at the top of its agenda and continually seeks to improve the lives of personnel and their families. In 2019, flexible working was introduced to give some soldiers more control and adaptability in their working week, to encourage better work / life balance for those that were juggling multiple demands (Ministry of Defence, 2020). Understanding how the intradyadic relationships can be supported is key in filling in some of the support gaps now presenting themselves within this new working model.

Welfare Officers, Padres and those working with individuals struggling at work, often report that there are also problems at home. Therefore, encouraging flexibility where possible, can create stronger relationships, which allows both parties to cope with and respond to the vast challenges that are the fabric of current military life. A more stable relationship can create a more stable employee.

Anes et al. (2012) concluded that leaders have a contribution to relationship satisfaction and listed a number of positive interventions that supported the effective management of work / home conflict for soldiers. Examples of interventions and work environments that could contribute to more effective management of work and family demands include: ensuring effective communications with home during deployment or separation; managing social resilience; fostering a family-friendly culture; and providing additional quality family time in between periods of a more concentrated workload.

### 10.9.3 ***Using exercise as a way to stay mentally fit***

I found that soldiers relied on exercise to stay mentally well. It is known that physical fitness has a positive impact on mental health and wellbeing (Martins & Lopes, 2013). Exercise (including sex) is proven to reduce the risk of health and mood disorders such as cardiovascular disease and diabetes which are known contributors for sexual difficulties (Fergus et al., 2019; Liu et al., 2016; Lox, Martin Ginis, Gainforth, & Petruzzello, 2020). Young soldiers are much more likely to have psychogenic sexual disorders, but as physical activity reduces and roles become more desk based, older soldiers with increasing workloads are more at risk of developing organic based concerns.

Exercise was an area where soldiers felt they could manage their own wellbeing. Military culture supports exercise in the workplace and encourages activity for those individuals in both active and deskbound jobs (Ministry of Defence, 2017-2022) . Keeping fit is a positive defender against many diseases and mood disorders and there is evidence that allowing access to exercise changes the perception of workplace contentment (Martins & Lopes, 2013). Exercise is one area where soldiers could take control and make choices for themselves and should be encouraged at every level. This is more important for desk-bound personnel or those individuals known to have increased pressure and workload, who perhaps don't feel that they have the time.

### 10.9.4 ***Systemic resilience***

I found that soldiers who discussed systemic resilience (using different forms of support) were happier and reported feeling more in control. Much is made of personal resilience and wellbeing but Cacioppo et al. (2011) raise a convincing point; as a race, we achieve more with collective action. And whilst we may like to think we have individual strength and power, often it is the combined power that fosters success. Individuals do not operate alone and are continually impacted by their system. "Behaviour is always in relation to the behaviours of others" (Cecchin, 1987, p.1). The work of Melvin et al. (2015) indirectly demonstrated this stating that partners also have strength-based traits, whether that is being a caregiver, the expert Army wife, the listener or perhaps the

anxious spouse. The impact of whether partners contribute to stress or defuse it, is vital to understanding how to best support soldier mental health.

Morokqff and Gillilland (1993) argue this exact point, stating the positive impact of social support. This was evident in the findings of my study which showed how partner and social support are protective factors against overwhelm and distress. Where good partner and social structures were not in place, soldiers appeared to be alone with their distress. This was evidenced in my study by the number of participants who were thankful for the space to discuss their personal concerns.

Cramm et al. (2018) add to the premise that resilience is dynamic and can be negatively or positively impacted by a person's social system. It is not just partner resilience that is crucial to soldier wellbeing and threat appraisal, community resilience equally contributes to effective coping. Work on stress and resilience by Farrell, Bowen, and Goodrich (2015) offers the notion of community capacity which widens the support to families under pressure. Soldiers are embedded in a cultural context that enforces community. These social support systems provide connections and relationships on multiple levels that can strengthen personal resolve and coping.

## 10.10 Soldiers most at-risk of maladaptive behaviours

With over 70,000 regular personnel serving in the British Army, it would not be practical or appropriate to begin assessing the sexual functioning and behaviour of all staff. Through the mixed-methods analysis, my study was able to identify 10 at-risk groups most appropriate for psychosexual questioning, (refer to Chapter 9). For 7 of these groups, the strength of the correlation between stress and sexual functioning were measured as strong, with much of the variance in sexual functioning directly linked to their current stress experience. Consequently, these findings support more appropriately targeted education for both clinicians and soldiers.

These 7 identified at-risk groups showed markedly elevated levels for stress, poor sexual functioning and behaviour. When presenting with stress symptoms

(such as fatigue, poor sleep hygiene, digestive concerns or lack of concentration), targeted sexual assessment could offer an efficacious marker for ASF. Again, in this part of the study, Female soldiers proved to have a different profile to the other groups with little evidence of stress and sex associated difficulties.

The remaining groups stood out as particularly exposed to elevated stress and relationship fracture. The most concerning groups were soldiers who lived alone and OR aged 26-30. Secondly, those soldiers who fit into more than one of the at-risk categories were more vulnerable to maladaptive behaviours, demonstrating effect sizes above 90% in some areas. This serves as important data for clinicians when assessing for strain and overwhelm.

When considering the high levels of sexual function decline and the low reported levels of OSA and CSB, results demonstrated that soldiers in this study were more likely to have increased sexual inhibition rather than elevated excitation.

### *10.10.1* ***Cultural schemas***

Stress perception is sensitive to personal schemas. An individual's core beliefs and experience shape how they make sense of their world (Harvey, 1999). Not all soldiers will experience, appraise and cope with stress in the same way. Predetermining factors, such as adverse childhood experiences or trauma or sexual scripts together with current circumstances including attritional daily hassles, change in personnel or work overload all impact on an individual's ability to accurately appraise threat. In turn, that assessment of threat will be met by either a healthy coping mechanism or an avoidant response.

Across an Army of thousands of soldiers, it would be impossible to establish which personnel would be susceptible to maladaptive schemas (mistrust, abandonment, entitlement, pessimism etc.) based on experiences prior to enlisting. However, it could be possible to gain an understanding of where in the soldiers' career, they may be exposed to raised risk for attritional stress and fatigue.

## 10.11 Discussion reflections

Late into my study I discovered a paper by Bartone (2006, p. 134) describing how military leaders can contribute to soldier resilience. Within it, he described the "primary stressor dimensions of the modern military" as; isolation, ambiguity, powerlessness, boredom (alienation), danger (threat) and workload. Two things stuck me about this paper. The first was the striking parallels in his findings to my own in relation to stress definition and soldier experience. This was a huge positive for me. Replication and study robustness offered reassurance that the findings were an accurate representation of the pressures placed on Service personnel. The second, was the realisation that little had changed in terms of soldier strain in the last 15 years.

Albert Bandura (1977) wrote…

*'Most of the images of reality on which we base our actions are really based on vicarious experience'*

I considered the fact that we often look for the expected, what we have always seen, probable diagnosis or normal symptomology. So, when we review the mental health and wellbeing of soldiers, are we are missing the unexpected? There could be different ways of managing holistic care that could offer new patterns and broader perspectives on personal experience and psychological support. Sexual functioning is a marker for wellbeing decline and should be considered more widely.

My study highlighted at-risk groups based on self-reporting measures and participant experience. Its findings were able to demonstrate that when we look more closely at those people exposed to routine stress, it has a systemic affect. It impacts on those around them, primarily those they have relationships with.

Working though the data analysis and qualitative findings, real stories emerged, both positive and negative. The main thread exposing how relationships either serve as a conduit for healthy resilience or conversely as a contributor to the strain. All relationships are unique, but good relationships (both inside and outside of work) have the power to change our perspective, our self-worth and our mental health.

# 11 Study Limitations

The study had several limitations. Some numbers in key categories were under-represented, with any groups less than five people excluded from some of the data analysis. Also, the four measures used in this research asked participants to reflect on different timescales and therefore some measures looked at the previous month, while others considered the previous six months.

The sampling strategy for this study could have allowed for self-section bias. Self-selection bias is described as an issue that is created when survey respondents choose for themselves whether they wish to partake in a study (Lavrakas, 2008). Those soldiers who were experiencing sexual difficulties could have been more inclined to complete the survey. Lower response rates are more exposed to self-selection bias with response rates of below 60% considered as likely to correlate with a high chance of participation bias (Elston, 2021). Whilst it is hoped that the larger response rate in this study would mitigate against bias, with the total number of participants invited to partake unknown making the final response rate unclear.

The qualitative section of this research was conducted after unexpected detail in the responses. Data were in response to open-text boxes which placed limitations on the information provided. Hyman and Sierra (2016, p. 1) state that ‘a questionnaire is only as good as the questions it asks’ arguing that precision is required for well-structured research. In this case, the catch-all questioning did not intentionally aim to collect such diverse data and therefore may have limited participant response on more specific areas of sexual behaviour. There are some advantages in open-ended questions, such as allowing freedom to provide a broad range of answers, not being influenced by the researcher and analysing difference (Boruchovitch & Schall, 1999; Reja et al., 2003). However, limitations include answers being inadvertently being biased towards articulate individuals (the more confident in writing, the more information is provided), larger non-responses and restricted cross-study comparisons (Hyman & Sierra,

2016; Reja et al., 2003). Furthermore, only a subset of survey respondents answered the open-ended questions.

It is important to note that the nature of stress itself was not defined for soldiers and may not purely be limited to work or home. There may be many more factors that influence elevated stress and equally several other factors that might impact on sexual function and behaviour. Sex itself was not explicitly defined in this research and therefore, soldiers relied on their own interpretation of what sex meant to them. This study also relied on self-reported data, which could be subject to recall and desirability bias or unconscious denial. Military personnel are thought to under report mental health and domestic abuse but over report combat exposure (Karney & Crown, 2007), however, there is no published data on how soldiers might report sexual experience.

Underreporting may have impacted the surprising low results on OSA and CSB. Perception is critical to recognising and reporting risk and soldiers may not measure their own risk objectively. Moreover, if risk is influenced by social conditions and cultural norms, then the masculine environment of the Army might minimise the appraisal of unhealthy behaviours or create group thinking (Breivik et al., 2019). The concept of social desirability is a known contributor to bias in sex research, particularly for men (Kelly et al., 2013) and was therefore considered as a potential bias in this study.

Finally, there are pharmacological, physiological and relational considerations that may contribute to poor sexual functioning (Adrienne Keller et al., 2006). These have not been assessed or reviewed as part of this study but could form part of more in-depth research into the sexual experiences of soldiers.

### 11.1.1 ***Improvements for a repeat study***

Should this study be repeated, there are some changes to the research that could be beneficial.

- A more structured approach to qualitative questioning. The ‘any else’ approach did not expect to produce such rich data and as such, suggests

that soldiers are willing and open to offer helpful insights into their experiences of stress and its relation to their sexual behaviours.

- Asking specifically about OSA and CSB in the qualitative questions. Little data were offered on these topics meaning some context was absent. This also impacted on merging and how the statistical data on the OSA/CSB and living arrangements research questions were brought together.
- Asking for exact age in the survey
    - By having the exact age of soldiers, it would have allowed for a more sophisticated manipulation of the data groups.
- Collecting more data on under-represented categories
    - Some numbers in key categories were low in numbers, such as those soldiers who were currently deployed on Operations and those serving for less than a year. More information is required to understand how these groups act in comparison to other groups.
- A further follow-on qualitative study could increase the response rates and reduce response bias. This could also be helpful for OSA and CSB results where information on soldier experience was limited.

# 12 Future Research

This study has shown that the field of sexual behaviour is under-researched in the British Army and the wider military community. It is believed that this is the first study to investigate the links between stress and sexual functioning in a cohort of soldiers. There is much more to learn on this topic with potential research opportunities in:

- How sexual functioning represents current state-of-mind
    - Knowing that declining sexual functioning is correlated with increasing stress levels, it could be useful to understand in more detail which type of sexual difficulty is most linked to ASF and mental wellbeing. In particular, understanding how ASF impacts on desire and relationship strength could be helpful in ensuring that soldiers have a solid systemic resilience structure in place.
    - More information is required to understand the link between stress and sexual functioning. How assessment may support appropriate treatment with efficacy rates comparing studies of the primary treatment of stress against the primary treatment of the sexual difficulty or combined pathways.
- Understanding how living arrangements impact on mental health
    - The British military is currently piloting a future accommodation model (FAM) which aims to offer flexibility and fairness for its personnel. This research has demonstrated the variance in relationship and sexual contentment by current living arrangements. More information could be helpful to support the FAM by recommending changes that protect the relationships and support structures of soldiers.
- More information on the online sexual motivations of soldiers

        - With the advent of more creative online sexual experiences and the introduction of sex robots, much more research is required to understand how soldiers (with access, affordability and anonymity) may respond to these new opportunities.
        - With 6% of soldiers coming across illegal material online, more information is required to understand if this is intentional and whether this practice is escalating or declining.
    - Sexual functioning as an early indicator for elevated stress in other critical occupations
        - When reviewing the stress perception of Police personnel, Webster (2012) found results that mirrored much of the stress experience of soldiers. This research could have wider implications for other critical occupations including the Police, Fire service and NHS. This is particularly helpful in the current climate where the COVID-19 pandemic is putting extra strain on key services.

With both key at-risk groups and protective factors against stress and resilience overwhelm identified through this study, this research can offer targeted groups for purposeful sampling in future research with British soldiers.

# 13 Study Recommendations

Academics and practitioners in the field of mental health continue to research and discover more effective ways of assessment, psychoeducation and the treatment of psychological disorders with the aim of effecting better outcomes for those that suffer. This study sought to be a contributor to this research by offering new innovative ways of strengthening the healthcare of British soldiers.

Recommendations have come from a combination of the results of this study and the wider literature. Conclusions from this research has therefore led to the following recommendations:

- Psychosexual training for clinicians
- Greater awareness for welfare teams
- Systemic resilience training for commanders
- Psychoeducation for soldiers
- Awareness of at-risk groups
- Alerting the importance of healthy relationships to policy makers

With over a third of British soldiers reporting sexual difficulties, psychosexual concerns are not an insignificant issue. The military may consider appointing a relationship specialist to advise its Senior Health Advisor on the benefits of systemic resilience and healthy intimate partner relationships. Soldiers make couple decisions, from help-seeking choices to remaining in the Army, and therefore the welfare of the couple and the joint perception of the institution, has a direct impact on the Service.

With known financial pressures on public sector roles, more research should be conducted on the feasibility and acceptability of these recommendations and wider psychosexual health assessment improvements.

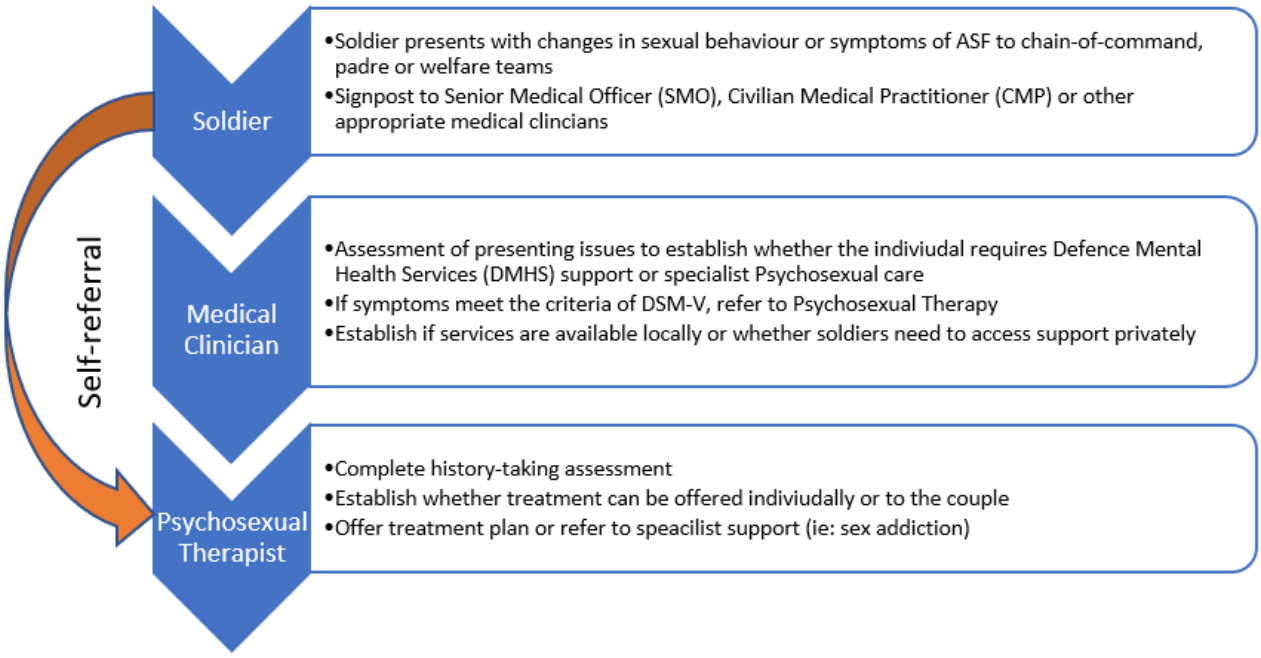
## 13.1 Psychosexual training for clinicians

Questions on sexual functioning offer an important measure of physical, cognitive and emotional health. Psychosexual training would enable those

clinicians that support soldiers presenting with stress symptoms to explore sexual functioning and behaviour as part of their patient assessment. Whilst there may be other contributing factors, poor sexual functioning has been evidenced to be correlated to stress. Results have also shown that OSA is prevalent among this community which is not currently being assessed.

Clinicians could therefore benefit from education on psychosexual referral pathways (refer to Figure 29: Treatment pathway for psychosexual presentations) with increased knowledge of the type of support available for sexual difficulties. Not all psychotherapy is currently regulated in the UK (British Association for Counselling and Psychotherapy, 2020) and referrals should only be made to those practitioners with the appropriate psychosexual qualifications.

**Figure 29**: Treatment pathway for psychosexual presentations




In 2017, Relate published recommendations that government should provide training and guidance on sex and relationships for frontline health professionals to help them improve referrals and signposting to support services. This should not be different for military healthcare clinicians in order to fully appreciate the implications of sexual functioning on mental health and wellbeing. Military

healthcare providers should recognise the importance of permission-giving when discussing sexual difficulties with their patients. Inclusive and appropriate language will provide a safe non-judgmental space for soldiers to discuss areas of behaviour, which have historically been associated with stigmatisation.

60% of UK health professionals believe that sexual functioning should be part of a holistic approach to patient care, but many feel ill-equipped to include it (Dyer & das Nair, 2013). Psychosexual training urges exploration into cultural norms, how personal bias stops early screening of maladaptive behaviours and could help clinicians reflect on their own barriers to proactive discussions. This is particularly important for clinicians who find sex a difficult subject to discuss and may need to reflect on their own prejudice and judgements before including psychosexual questioning in their work.

## 13.2 Greater awareness for welfare teams

Relationships are a barometer for wellbeing. If relationships are failing, soldiers can become low in mood, distracted and ineffective. Good Welfare support can "balance the negative aspects of military life" (Keeling, 2014, p. 353) but more importantly, they can be the first observer of escalating problems at home.

Welfare teams could be supported in their role through education on the associations between relationship and a broader psychological problem.

## 13.3 Systemic resilience training for commanders

Commanders can facilitate healthy coping strategies by utilising their leadership skills and creating a shared understanding of current stressors (Bartone, 2006). If resilience is to be considered systemic, then leaders can either promote self-empowerment and control or at worst, become a contributor to ASF.

Raising awareness of the direct impact that individual Commanders have on personal and partner happiness could offer a valuable link to mental health training. Moreover, education is required at multiple levels to eliminate the view that the Army itself is responsible for devolved local decision making. Stress response is driven by an individual's interpretation of threat plus the evaluation

of personal capacity to effectively respond. Therefore, the manner in which orders are delivered, will shape how instructions are interpreted and appraised.

## 13.4 Psychoeducation for soldiers

Psychosexual Therapy is a complex specialism which is most commonly accessed by GP referral (Firth, 2012). However, self-referral is a feasible option for those soldiers who feel they do not want to access help through the chain-of-command. Psychoeducation for soldiers detailing common mental health concerns, including sexual difficulties, could educate individuals on how they might take control of their own health and wellbeing. This could also support the development of personal agency, self-awareness and control, which are known to be a protective factors against ASF.

Soldiers could benefit from recognising changes in their own physical responses and behaviours. This is not necessarily a determination of what is considered as a normal sexual practice and what is not, but more akin to an individual assessment of what is atypical for them. ASF presents with abnormal, physical changes, declining sexual functioning or new sexual drivers. Any changes that have lasted over 6 months, should be investigated for psychological distress.

Whilst OSA did not appear problematic within this study, the impact of OSA on intimate partner closeness could be useful knowledge to soldiers. Crucially to respond responsibly to the development of a second wave in technology-mediated sexual activity, education on the cybercrime threat to national security could mitigate against future problematic behaviour leading to sextortion and potential security misconduct.

Considering the two types of coping strategies, approach and avoidant, soldiers should be educated on the benefits of stress perception and personal agency. Self-empowerment and control strategies can be trained as successful methods of managing global stress.

## 13.5 Awareness of at-risk groups

The study has further evidenced that the Army and the family are both greedy institutions that place competing demands on the soldier. Research has now shown that there are certain key at-risk groups who are more likely to develop maladaptive responses to stress. Clinicians, welfare teams, commanders and soldiers themselves should be aware of these at-risk groups to facilitate early diagnosis and intervention.

## 13.6 Alerting the importance of healthy relationships to policy makers

Relationships form part of systemic resilience and contribute to soldier wellbeing, happiness and key life decisions. Army policy makers should be aware of the implications of soldier overwhelm and relationship strain in relation to financial, operational and retention decisions.

# 14 Original Contribution

This is the first UK study to investigate the sexual functioning and behaviour of British Army soldiers in relation to additive stress. It has offered information that is vital for the Army to understand the impact of routine stress, sexual functioning, online sexual activity and compulsive sexual behaviour. The findings have been tested using validated instruments, presenting comparisons to published norms. Results have demonstrated strong links between stress and sexual functioning, offering Psychosexual Therapy as a valuable additional contributor to the mental health and wellbeing services currently provided.

Through this research, I have sought to evidence the importance of sexual functioning as an essential part of holistic care. In particular, for those occupations delivering a critical public service role where high intensity training may impede a well-adjusted stress response. A healthy sex life is a major contributor to wellbeing and happiness, maintaining essential bonds and reducing stress. It should form part of the routine medical assessment, if not for all patients, certainly for those most at-risk of problematic concerns.

Whilst there is much data on post-traumatic stress, routine stress has rarely featured in recent studies. Low intensity conflict is a misrepresentation of the current pace of military life and by demonstrating significant levels of stress and relationship fracture within this cohort of young soldiers, it is hoped that clinicians, commanders and policy makers will recognise the attritional strain currently placed on service personnel in peacetime and maintain their momentum in providing much needed psychological care.

Sex research is a crucial contributor to the advancement of psychotherapeutic care. I aspire to pioneer wider, less conservative discussions surrounding problematic sexual functioning and behaviour to increase awareness across the healthcare chain.

Lastly, this study has been able to contextualise how some soldiers define effective coping strategies that could influence training and support for soldiers

and their chain-of-command. Personal agency was identified as a positive theme within the data, detailing the importance of systemic resilience in personal wellbeing.

# 15 Study Conclusions

Soldier's report being fatigued and unnecessarily overworked in a period of Army history which claims to be low intensity but continues to demand outcomes with greater financial pressures and less manpower. This is having an impact on some Service personnel's ability to successfully appraise and cope with strain, causing Attritional Stress and Fatigue (ASF).

There is a strong correlation between the stress levels and the sexual functioning of British soldiers which could present clinicians and educators an opportunity to help better identify when a soldier's stress appraisal and coping mechanisms may be compromised. If individuals are trained to push through the natural fight or flight response, threat appraisal may be compromised and therefore education will be critical to help identify markers for wellbeing concerns.

Decision making is at the heart of clinical practice (Gambrill, 2012). With growing emphasis on symptom focussed clinical judgements rather than diagnosis led practice (Hammond, 2019), sexual functioning is a key marker for ASF and is being missed as part of soldier wellbeing assessment. For varying reasons, clinicians report finding the subject of sex and relationships difficult. Soldiers need to feel confident in their medical practitioners to be able to discuss an area which is critical to their happiness and good mental health.

Users of psychosexual therapy in the UK have reported an improvement rate of 93% (Relate, 2020). Despite the increasing levels of sexual difficulties across the UK population, many do not seek help. Psychosexual therapy could offer much needed support for soldiers coping with sexual concerns related to overwhelm and could offer a complementary treatment for soldiers' psychological distress.

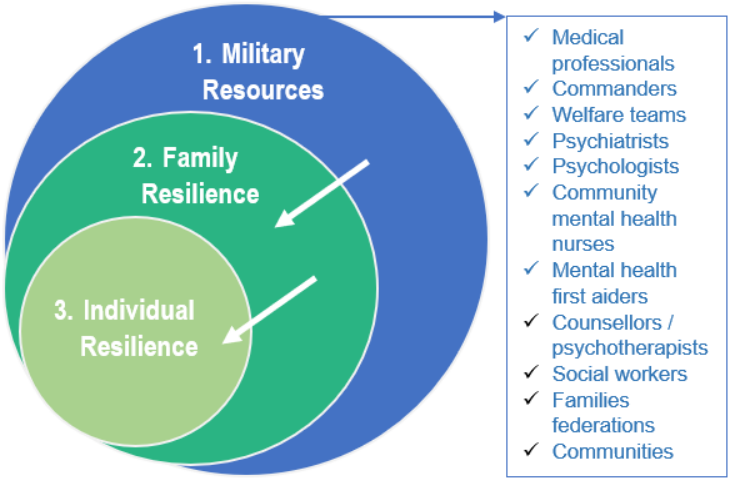
A high proportion of soldiers regularly use the internet for sexual activity, some of which may be driven by short term reward-seeking behaviours. Despite this, OSA and CSB did not appear to be generally problematic, although this could

be influenced by normalised behaviour; more qualitative research focusing on actual used and experience would be helpful. However, a link was found between rising OSA and declining partner connectedness which may create problems in the future as OSA becomes more technologically sophisticated. Some OSA practices, such as running across illegal material, raised questions around national security and should be explored in more detail.

As a psychotherapist working with family systems, I recognise that personal distress is impacted by a myriad of interactions and behavioural patterns. For soldiers in particular, where there is such little control over their own stressors, resilience cannot be an individual phenomenon. This is supported by evidence that positive leaderships and support improves wellbeing (Bridger et al., 2013; Brooks & Greenberg, 2018)

Figure 30 explains how systemic resilience can support an individual to cope with stress. This study has demonstrated that soldier resilience is not just related to individual coping; commanders and communities will either support or impair those coping strategies, dependent on their conduct.

Figure 30: Systemic resilience




Adapted from (Arditti, 2015)

On the whole, there was a compassion and humanness within the stories provided by the participants that was in contrast to the tough and hardy cultural projection of soldiers. Participants wanted to be good soldiers as well as good

partners, but struggled to balance the demands of both, which often had a detrimental impact on their own happiness and wellbeing. Soldiers are extraordinary individuals who do a remarkable job. After fifteen years of little change in the cause of soldiers' routine stress, perhaps now is the time to consider new, more creative and innovative ways to assess, educate and treat ASF and engender longer-term more healthy coping strategies.

In summary, principal conclusions from this study found:

Table 75: Principal d*iscussion conclusions*

| ***Research Question*** | ***Main study conclusions*** | ***Informed by*** |
|---|---|---|
| **Q1.**<br>**IS STRESS CORRELATED WITH SEXUAL DIFFICULTIES?** | Sexual functioning is an effective indicator of elevated stress in British soldiers and should be considered by clinicians as a measure of Attritional Stress & Fatigue (ASF) in the 10 key high-risk groups | Table 36: Correlation between stress and sexual functioning and Table 62: Correlation between stress and sexual function by at-risk categories |
| | With two third of soldiers moderately or highly stressed, it was concluded that stress is additive and should be considered as a response to biophysical overwhelm. | Table 15: British Army soldier stress levels by risk category – analysed against the PSS comparison group mean (8.41) |
| | Training to push through the fight / flight stress response could impair threat and coping appraisal suggesting some soldiers may not be recognising elevated stress markers. | Sharma and Sharma (2012)<br>Chapter 7.3 Attritional Stress and Fatigue |
| | Soldier appraisal and coping strategies are impacted by good leadership, healthy relationships and systemic resilience. Education could be helpful to inform leaders on their positive or negative contribution to soldier resilience. | Chapter 7.4<br>Figure 30: Systemic resilience |
| | Soldiers and partners blame the Army as a whole for discontentment and unnecessary strain with escalating resentment. | Chapter 7.4.4 |
| | Good busy / bad busy impacts directly on soldier wellbeing and is a significant contributor to declining wellbeing. | Chapter 7.6.1 |
| **Q2.**<br>**IS STRESS CORRELATED** | Whilst the relationship between stress and online sexual activity (OSA) is statistically significant, it is not strongly associated. | Table 40: Correlation between stress and OSA for soldiers |

| | | |
|---|---|---|
| **WITH ONLINE SEXUAL ACTIVITY (OSA)?** | OSA is not problematic for most soldier with only 2% in the high-risk category. Evidence from the qualitative data suggested that soldiers were more concerned with their primary relationship health rather than wishing to discuss online pursuits. | Table 33: Number of high-risk soldiers for problematic online sexual activity<br><br>Chapter 7 (7.5.2 – Focus on relational quality) |
| | OSA in general was commonplace (85%), which has implications for national security. Awareness of vulnerability is vital to reduce the amount of soldiers exposed to cybercrime. | Chapter 6.2.4 |
| **Q3.**<br>**IS ONLINE SEXUAL ACTIVITY CORRELATED WITH SEXUALLY COMPULSIVE BEHAVIOUR (CSB)?** | OSA is strongly associated with compulsive sexual behaviour (CSB). | Table 44: Correlation between OSA, Table 45: Correlation between CSB and OSA for by sex, Table 71: Correlation between OSA and CSB by at-risk categories |
| | All high-risk soldiers for CSB were male, suggesting a difference in behaviour for each sex. | Table 31: Number of high-risk soldiers for problematic compulsive sexual behaviour and Table 45: Correlation between CSB and OSA for by |
| | With stress accounting for 7% of variation in behaviours, soldiers struggling with OSA or CSB could be masking a wider psychological problem. This will be helpful for clinicians in their assessment of maladaptive behaviours. | Table 46: Regression analysis showing how a persons sex and online sexual activity predicts compulsive sexual behaviour |
| | For 8 of the at-risk groups, there was a stronger corelation between OSA and CSB. | Table 71: Correlation between OSA and CSB by at-risk categories |
| **Q.4**<br>**IS OSA CORRELATED WITH LOSS OF DESIRE AND SEXUAL SATISFACTION?** | OSA is not strongly correlated with reduced libido, however, it is strongly correlated with a decline in sexual satisfaction | Table 48: Summary of logistic regression analysis for OSA predicting loss of sexual desire and Table 49: Summary of logistic regression analysis for OSA predicting loss of sexual satisfaction |
| | Soldiers discussed a need to improve their primary relationships with little discussion on OSA or extradyadic behaviour. | Chapter 7: Phase 2 Qualitative findings |

| | | |
|---|---|---|
| | Online sexual activity is moving into its second wave where virtual relationships will be more commonplace. These types of OSA's may have a different psychological and biological effect on soldiers and warrants more research. | Chapter 10.5.3<br><br>McArthur and Twist (2017) |
| **Q.5**<br><br>**IS OSA CORRELATED WITH FEELINGS OF INTIMATE PARTNER CLOSENESS?** | OSA had a moderately low correlation with intimate partner closeness. | Table 50: Correlation between OSA and sexual partnership |
| | Results for female soldiers were not statistically significant suggesting a differing gender experience and lower levels of relationship disruption. | Table 50: Correlation between OSA and sexual partnership |
| **Q6.**<br><br>**DOES LIVING ALONE HAVE A HIGHER CORRELATION WITH INCREASED ONLINE SEXUAL ACTIVITY WHEN COMPARED TO OTHER LIVING ARRANGEMENTS?** | There was no evidence that living alone contributed to an increase in OSA. | Table 52: Mean plots for OSA by living arrangements and Table 53: Independent samples Kruskal-Wallis test summary |
| | One in five soldiers in shared accommodation reported problematic levels of OSA. | Table 52: Mean plots for OSA by living arrangements |

*CLINICAL RESEARCH AIMS DISCUSSION CONCLUSIONS*

| | | |
|---|---|---|
| **THE 10 AT-RISK GROUPS** | 7 at-risk groups showed markedly elevated levels for stress, poor sexual functioning and behaviour. When presenting with stress symptoms (such as fatigue, poor sleep hygiene, digestive concerns or lack of concentration), targeted sexual assessment could offer an efficacious marker for ASF | Table 62: Correlation between stress and sexual function by at-risk categories |
| | Soldiers who lived overseas with their partners and OR's aged 26-30 have the strongest correlation between stress and sexual functioning. | Table 62: Correlation between stress and sexual function by at-risk categories |
| | Soldiers who fit into more than one risk category are more likely to experience sexual difficulties with some effect sizes above 90% | Table 63: Significant correlation between stress and sexual functioning by more than one at-risk category |

| | | |
|---|---|---|
| | Female soldiers over 40 have a completely different profile to the other 9 groups with little evidence of stress and sex associated difficulties. More research is required to understand the differences in stress response and sexual behaviour by gender. | Table 37: Correlation between stress and sexual functioning by sex, Table 41: Correlation between stress and OSA for soldiers by sex, Table 65: Correlation between stress and sexual difficulty by at-risk categories |
| **EVIDENCE OF EFFECTIVE STRESS MANAGEMENT AND ITS IMPACT ON SEX AND RELATIONSHIPS** | Positive empowerment and control were the main contributors to effective stress appraisal, coping and intimate partner relationship health | Chapter 7.5 Theme 3: Personal agency |
| | There was a compassion and humanness to the soldier stories within this study that was in contrast to the cultural projection. Soldiers report want to be good soldiers and good partners, but struggle to balance the demands of both and get their own needs met | Chapter 7: Phase 2 Qualitative findings |
| **HOW FEMALE BEHAVIOUR IS CRITICALLY DIFFERENT TO MALES** | Female soldiers have a different stress response and sexual behaviour profile suggesting that clinical assessment should be adapted accordingly. | Table 22: NATSAL-SF scores by , Table 30: Sexual compulsivity within the British Army by Table 30: Sexual compulsivity within the British Army by , Table 37: Correlation between stress and sexual functioning by , Table 38: Regression analysis showing sex and stress as predictor of sexual functioning, Table 41: Correlation between stress and OSA for soldiers by , Table 42: Regression analysis showing sex and stress as predictors of online sexual activity ,Table 45: Correlation between CSB and OSA for by and Table 46: Regression analysis showing how a persons sex and online sexual activity predicts compulsive sexual behaviour |
| | Female soldiers engage in OSA in low numbers with none considered to be at risk for problematic behaviours. | Table 45: Correlation between CSB and OSA for by |

| | | |
|---|---|---|
| | Women in the military are highlighted as at increased risk for mental health concerns yet research into both the female stress response and sexual experience is limited. | Chapter 3.3.8 |
| | With an increasing number of women moving into combat roles, more research is required to understand the psychological impact of working in a culturally machoistic environment. | Chapters 3.3.8 and 3.4.3.2 |

# 16 Reflexive Summary and Final Thoughts

'Falling trees'

Soldiers will continue to want to work hard and the unique demands of the military are unlikely to change in the foreseeable future. Therefore, it is essential for their mental health and wellbeing that we find positive ways to educate them on effective ways to identify and treat attritional stress and fatigue (ASF).

## 16.1 Reflexive summary

Many years ago, I heard the story that prior to a Battalion move from Chepstow to Cyprus, car stickers were produced with the slogan 'a soldier is for life, not just for Cyprus'. Underneath this squaddie humour is the reality that a relationship in one part of the world can suddenly be re-evaluated as situations change. An impending move could mean the prospect of an untenable separation, in this case 2700 miles away from the anchor of family and the familiar. Soldiers marry for many reasons, they marry to keep the relationships with the ones they love, to not be alone when they move to another country or even for the entitlement of their own home (Hogan & Furst Seifert, 2010; Karney & Crown, 2007). However, partners do not always fully understand the implications of what they are signing up to. For some, the shock of military life is extremely stressful resulting in the soldier having to manage both the demands of the job and the competing needs of the family.

My study has demonstrated that some soldiers are struggling to successfully cope with these demands with a number of highlighted additional pressure points. It has also evidenced that personnel have different stress appraisal management competencies, suggesting that some may not always recognise stress as problematic. Others use personal agency and positive perception to keep themselves healthy. Most importantly, this study has provided a link between stress and sexual functioning, which may offer a vital measure for medical practitioners to measure the current state of a soldier's wellbeing. This

could help with accurately assessing escalating maladaptive responses before they lead to problematic behaviours.

Valuable results from this study evidenced those soldiers at the greatest risk of developing wider psychological disorders resulting from stress overwhelm. With the right education across the military support structures, these vulnerable personnel can be offered a more holistic approach to improve their wellbeing support.

There have also been many positive findings within this study. It has been reassuring to discover that OSA and CBS did not cause problems for soldiers at the levels that had I feared. There are some groups that would benefit from a greater understanding of the implications of their OSA behaviour on their intimate partner closeness and recognition that hypersexual interactions will become more complex in the future. But in the main, soldiers preferred to seek out human connectedness over virtual experiences.

Finally, the most optimistic results centred on those soldiers who were managing their stress appraisals and coping strategies well. Knowing the long-term damage of poor stress perception (McGonigal, 2013), there is much to learn from the personnel who successfully adapt to routine pressure, continual change and the constraints of being persistently under command. It is hoped that these findings will contribute to the current momentum in military mental health that seeks to protect the Army's most valuable asset, its people.

### 16.1.1 ***Locating this study in a time of crisis***

Phase 3 analysis started at an extraordinary time in global history. In early 2020, COVID-19 was spreading at speed across the world and the United Kingdom had imposed strict measures on the nation's movement. This and many other subsequent chapters were written in what will be remembered as *lockdown,* which fundamentally changed how people lived their lives. Whilst in terms of statistical analysis, it has no bearing on the data that was collected in 2018-2019, there is a recognition that for this phase of the study, life for me as a

psychotherapist and researcher as well as the military personnel and their families had irreversible changed.

COVID-19 was making headlines, the Prime Minister was in intensive care and the military was deployed to build NHS Nightingale, a 4,000-bed emergency hospital within 9 days (BBC, 2020). Children could not go to school; businesses were closing, and people feared for their vulnerable loved ones. Households were unable to mix, domestic violence calls increased by 25% and public mental health was a rising concern.

I acknowledge that my own researcher bias changed during the early phases of the pandemic. When I reviewed the data of soldiers who lived alone, I wondered about their own levels of stress in this crisis. Although the data were collected prior to COVID-19, isolation and disconnection cried out of the Phase 2 qualitative findings as a major contributing factor to attritional stress and fatigue. When I considered those soldiers living abroad, I considered the pressure of not being close to family and friends. My findings also suggested that the loss of personal liberty and control might reduce a protective factor against soldier stress. The pandemic would be a further additive pressure to challenge personal resilience.

There will undoubtedly be future national emergencies; however, during these times it is often the men and women of our Armed Forces who are out in the streets, working to protect the nation, putting their own personal needs second. I wondered if these times engendered greater pride in their serving their country, added to the global pressures placed upon them or potentially provided a combination of both.

A question for future research.

### 16.1.2 ***Embargo decision***

Throughout the study, the decision to embargo this thesis was considered a possibility. With sensitive data on sexual functioning open to misinterpretation and without true consideration of the limitations of this study, I had concerns that the research findings could be manipulated and used for harm (refer to

chapter 5.6). Ethically, I was torn between my commitment to the soldiers' data which they provided under the belief that it would aid improvements to healthcare or my concerns that the findings could be used to damage the reputation of the British Army.

Ultimately, the decision was made not to embargo. Statistics on sexual functioning were no more or less contentious than results published on foreign armies (Badour et al., 2015; Duron et al., 2018; Wilcox et al., 2014; Yehuda, Lehrner, & Rosenbaum, 2015) or findings from the UK general population (Mitchell et al., 2013; Relate, 2017). I strongly believe that the conversation surrounding sexual functioning and behaviour should be louder and therefore, the risk of not publishing this work felt greater than the potential threat of misuse.

## 16.2 Final thoughts

In 1984, the Biosphere 2 science research project was launched in Arizona, USA. As a replica of the Earth's ecological system, this study aimed to replicate the earths living systems allowing scientists to experiment with farming innovation and consider ways to support human life in Outer Space. One of the most remarkable findings of this project was the role that wind played in the healthy growth of trees. Trees inside the Biosphere grew more quickly than those planted in normal conditions, but they would fall over before they fully matured. Researchers discovered that without wind inside the dome, trees did not create the *stress wood*, a natural process that hardened its solid base and allowed for optimal sun absorption. Without wind and the progressive stress response of resisting pressure, tree trunks did not develop to be strong enough to hold their own weight (Gril et al., 2017).

I found this story fascinating and came across several blogs that referred to this study in relation to human stress and the importance of the successful management of individual pressure to build healthy resilience and coping strategies. Throughout the process of academic research, I too have found myself considering my own response to stress. On my first day as a doctoral student, I attended an induction programme, which commenced with a discussion on the dangers of studying at this academic level. They discussed

depression, isolation, loneliness and imposter syndrome. From the outset, I was made aware of the stress associated with research on this scale and the importance of self-care and coherent support networks.

Without question, I have felt the pressure of completing this thesis. From the multiple research ethic committee rejections, bouts of insomnia caused by the complexities of statistical analysis to my own broader hesitations of producing research that could withstand global academic rigor.

Feasibly, much like the trees, without four and a half years of continual pressure and pushbacks, I would not have strengthened my own abilities and this thesis would be less robust. I have relished the opportunity to learn, to grow personally and finish this study with much new knowledge from which to continue my career. I have also been able to give British soldiers a louder voice in relation to improving sexual functioning, a subject matter that is so very often silent.

# 17 Appendices

## 17.1 Appendix 1: Participant recruitment email

**SUBJECT: QUESTIONNAIRE ON STRESS AND SEXUAL SATISFACTION. Voluntary and anonymous survey supporting independent research from the University of Chester.**

Good Morning

Thank you for taking the time to read this email.

Would you be willing to help with a PHD research project on how stress and risk-taking behaviours impact on our well-being, relationships and sexual satisfaction? It's just a short online anonymous questionnaire and won't take up too much of your time.

The findings will support current counselling and sex therapy assessment and treatment processes and improve wellbeing provision to the UK Armed Forces. It is completely anonymous, you can leave at any time and your IP address will not be tracked.

Please be as honest as you can. This is research is not concerned with what you personally enjoy, it is only about measuring how stress and risk influence how happy we are with our sex lives.

I would be so grateful if you were able to support this very important work. It is the first of its kind in the UK. This research has approval from the MoD Research Ethics Committee, but is totally self-funded and therefore outside of the chain of command.

**Here is a link to the questionnaire.**

https://chester.onlinesurveys.ac.uk/armed-forces-survey-on-stress-and-sexual-satisfaction

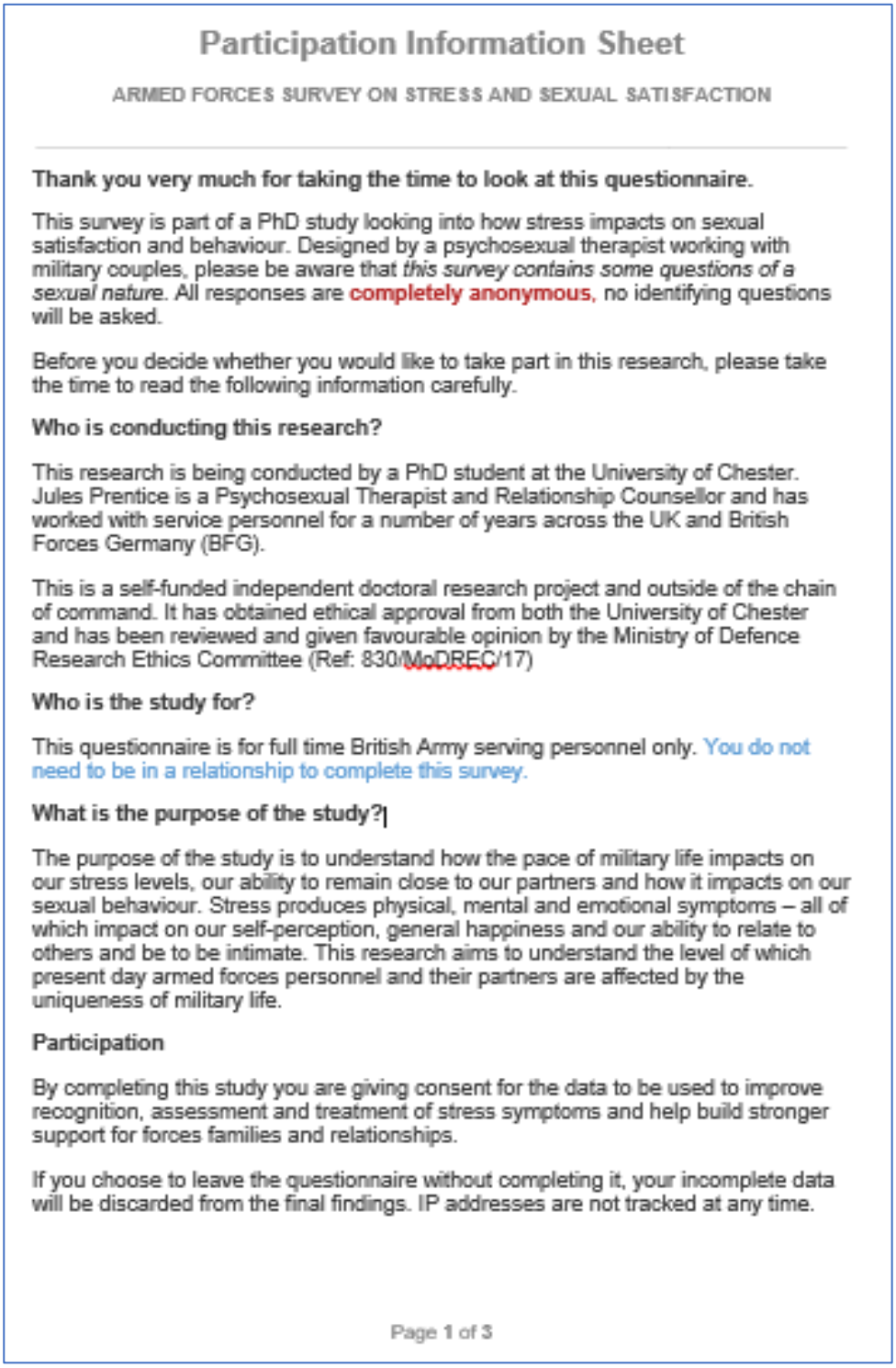
For further information on this project, please look at the Participant information Sheet attached.

Finally…thank you so much for your support. It is much appreciated.

*Jules*

Julie-Anne Prentice PGDip MCOSRT
Psychosexual Therapist & PhD Research Student
Chester University | Division of Counselling and Psychotherapy | Dept. of Social and Political Science

## 17.2 Appendix2: Participation information sheet



# Participation Information Sheet

ARMED FORCES SURVEY ON STRESS AND SEXUAL SATISFACTION

**Thank you very much for taking the time to look at this questionnaire.**

This survey is part of a PhD study looking into how stress impacts on sexual satisfaction and behaviour. Designed by a psychosexual therapist working with military couples, please be aware that *this survey contains some questions of a sexual nature*. All responses are **completely anonymous**, no identifying questions will be asked.

Before you decide whether you would like to take part in this research, please take the time to read the following information carefully.

**Who is conducting this research?**

This research is being conducted by a PhD student at the University of Chester. Jules Prentice is a Psychosexual Therapist and Relationship Counsellor and has worked with service personnel for a number of years across the UK and British Forces Germany (BFG).

This is a self-funded independent doctoral research project and outside of the chain of command. It has obtained ethical approval from both the University of Chester and has been reviewed and given favourable opinion by the Ministry of Defence Research Ethics Committee (Ref: 830/MoDREC/17)

**Who is the study for?**

This questionnaire is for full time British Army serving personnel only. You do not need to be in a relationship to complete this survey.

**What is the purpose of the study?**

The purpose of the study is to understand how the pace of military life impacts on our stress levels, our ability to remain close to our partners and how it impacts on our sexual behaviour. Stress produces physical, mental and emotional symptoms – all of which impact on our self-perception, general happiness and our ability to relate to others and be to be intimate. This research aims to understand the level of which present day armed forces personnel and their partners are affected by the uniqueness of military life.

**Participation**

By completing this study you are giving consent for the data to be used to improve recognition, assessment and treatment of stress symptoms and help build stronger support for forces families and relationships.

If you choose to leave the questionnaire without completing it, your incomplete data will be discarded from the final findings. IP addresses are not tracked at any time.

Page 1 of 3

# Participation Information Sheet

ARMED FORCES SURVEY ON STRESS AND SEXUAL SATISFACTION

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**Confidentiality and anonymity**

All data given will remain anonymous and no personal information or identifying information will be asked. Please be as honest as you can.

**How long will it take?**

The survey should take approximately 15 minutes to complete.

**What are the benefits of taking part?**

You will be supporting valuable research in an important aspect of relationship satisfaction within the British Army. You may learn a little bit about your own attitudes towards sex and stress too.

**Are there any possible disadvantages or risks of taking part?**

The questionnaire will ask you about your stress levels, relationships and sex which you may find thought provoking. You are under no obligation to answer any questions if you do not feel comfortable.

If you would like to talk to someone about stress and your relationship, you can access Relate online for a free confidential chat with a trained counsellor to discuss the best place for you to access support. This will be based on your individual circumstances.

https://www.relate.org.uk/relationship-help/talk-someone/live-chat-counsellor

**Do I get paid for taking part?**

Sadly, there is no payment for participating in this research. There is no need to travel as it is all online and should only take a short amount of time to complete.

**What will happen to the results of the research study?**

The results will be written up as part of a PhD thesis. It is also likely that the results of the study will be published in an academic journal and so will be publicly available. There are no identifying questions and so no participants can or will be identified in any report/publication.

The main aim of this research is to improve the provision of support for individuals who are finding their sex lives and intimate relationships are damaging their general wellbeing or happiness.

# Participation Information Sheet

ARMED FORCES SURVEY ON STRESS AND SEXUAL SATISFACTION

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## Right of withdrawal

You can remove yourself from the questionnaire at any point by closing your web browser. Once completed, the information cannot be deleted as the survey is completely anonymous, there is no identifying information linking a set of answers to an individual.

## Concerns or complaints

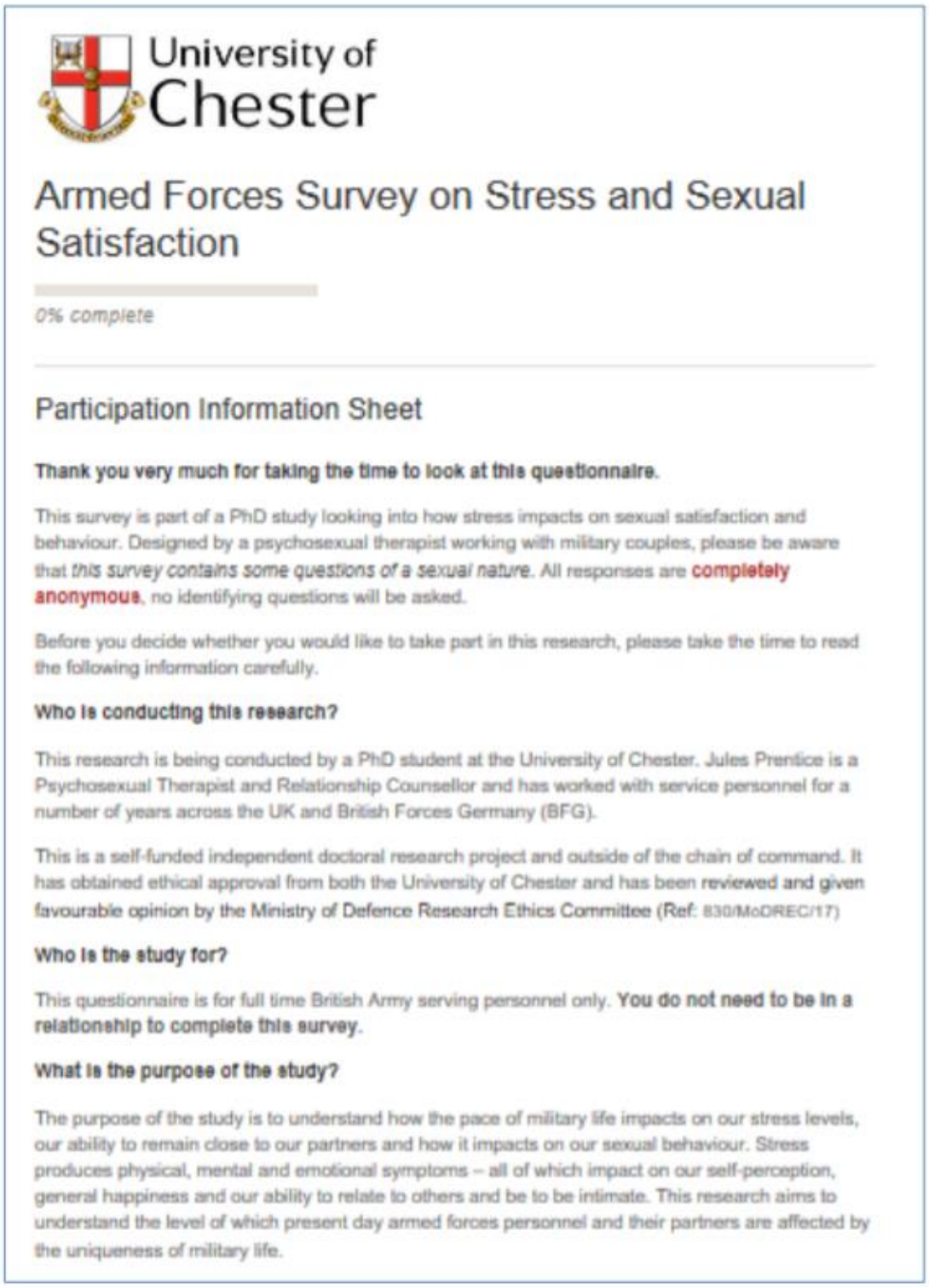
The researcher can only help if questions or answers are in regards to the study itself, the researcher cannot give advice or help in regards to stress or relationship concerns.

If you have a concern about any aspect of this study, please speak directly to the researcher, Jules Prentice. Email address 1805756@chester.ac.uk

Alternatively, please contact the Research Supervisor, Dr Andrew Reeves on a.reeves@chester.ac.uk.

If you wish to make a complaint about this research, you can put your concerns in writing addressed to Professor David Balsamo, Executive Dean of Social Sciences, Chester University, Parkgate Road, Chester CH1 4BJ. Tel: +44 (0)1244 511000

## 17.3 Appendix 3: Research survey



University of Chester

# Armed Forces Survey on Stress and Sexual Satisfaction

*0% complete*

## Participation Information Sheet

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**Participation**

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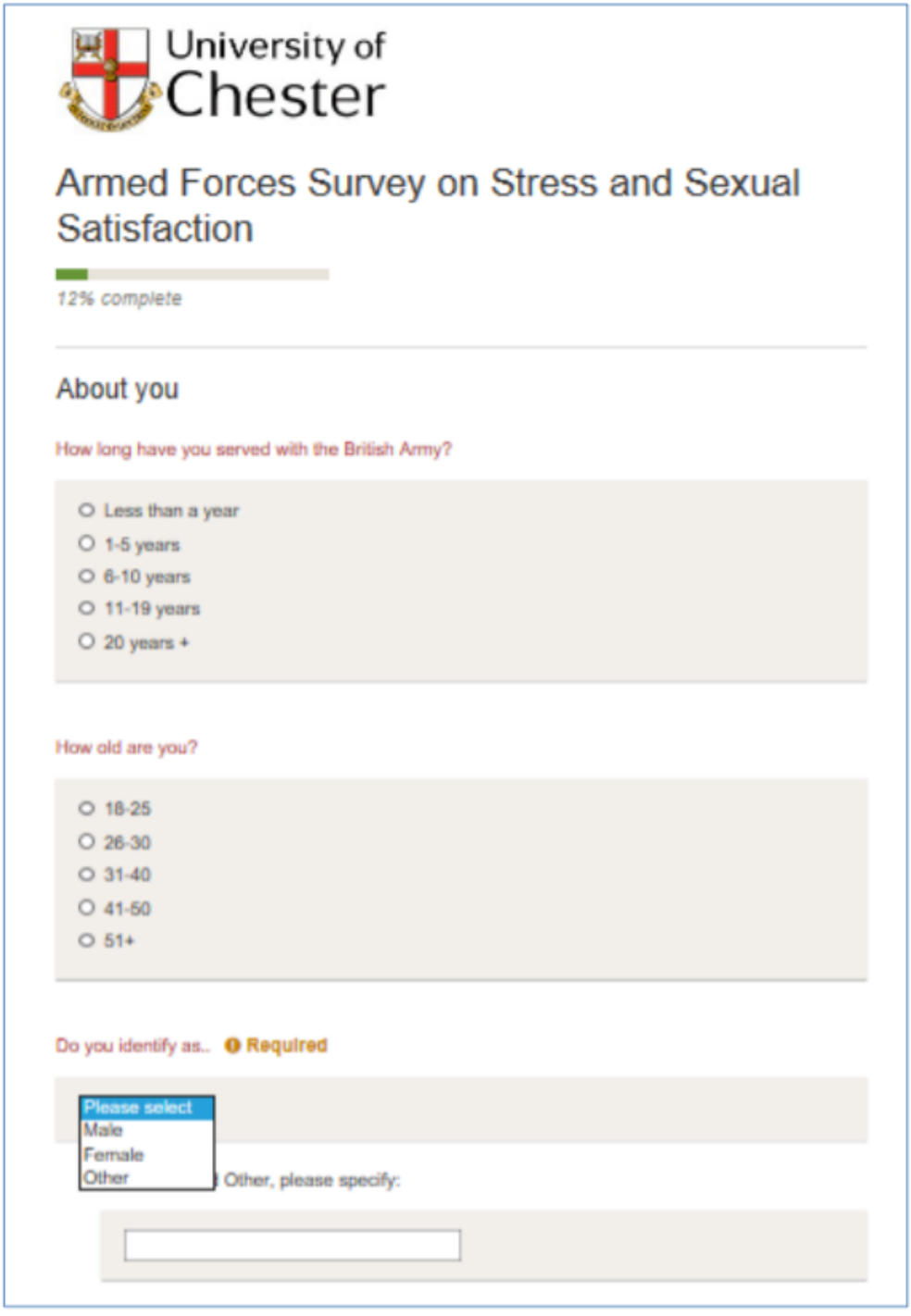
Alternatively, please contact the Research Supervisor, Dr Andrew Reeves on a.reeves@chester.ac.uk.

If you wish to make a complaint about this research, you can put your concerns in writing addressed to Professor David Balsamo, Executive Dean of Social Sciences, Chester University, Parkgate Road, Chester CH1 4BJ. Tel: +44 (0)1244 511000

**Q. 1** **Please tick to accept that you are willing to participate in this study** The nature, aims and risks of the research have been explained to me. I have read and understood the Information for Participants and understand what is expected of me. All my questions have been answered fully to my satisfaction.

☐ Yes, I agree to volunteer as a participant for the study described in the information sheet and give full consent

Next >



University of Chester

# Armed Forces Survey on Stress and Sexual Satisfaction

12% complete

## About you

**Q. 2** How long have you served with the British Army?

- ○ Less than a year
- ○ 1-5 years
- ○ 6-10 years
- ○ 11-19 years
- ○ 20 years +

**Q. 3** How old are you?

- ○ 18-25
- ○ 26-30
- ○ 31-40
- ○ 41-50
- ○ 51+

**Q. 4** Do you identify as.. ⓘ Required

Please select
Male
Female
Other

Other, please specify:

**Q. 5** What is your current relationship status? Required

Please select
Single (inlcuding divorced)
In a relationship for less than a year
In a relationship for more than a year
Married
Other

**Q. 6** What are your current living arrangements today?

- I live with my partner in the UK
- I live with my partner overseas
- I live in shared accomodation
- I live alone
- I am currently on tour / exercise
- I am weekly commuting
- Other

If you selected Other, please specify:

**Q. 7** What is your current rank? Required

Please select
Other Rank
Non-commissioned Officer
Commissioned Officer
Other

e specify:

‹ Previous  Next ›

University of Chester

# Armed Forces Survey on Stress and Sexual Satisfaction

25% complete

## How stressed are you?

This part of the survey uses a table of questions, view as separate questions instead?

**Q. 8** The questions in this section ask you about your thoughts and feelings ***in the last month***. Please indicate how often you felt a certain way.

Please don't select more than 1 answer(s) per row.

Please select at least 10 answer(s).

| | Never | Almost Never | Sometimes | Fairly Often | Very Often |
|---|---|---|---|---|---|
| In the last month, how often have you been upset because of something thathappened unexpectedly? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you felt that you were unable to control the important things in your life? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you felt nervous and "stressed"? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you felt confident about your ability to handle your personal problems? | ☐ | ☐ | ☐ | ☐ | ☐ |

| | | | | | |
|---|---|---|---|---|---|
| In the last month, how often have you felt that things were going your way? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you found that you could not cope with all the things that you had to do? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you been able to control irritations in your life? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you felt that you were on top of things? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you been angered because of things that were outside of your control? | ☐ | ☐ | ☐ | ☐ | ☐ |
| In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? | ☐ | ☐ | ☐ | ☐ | ☐ |

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University of Chester

# Armed Forces Survey on Stress and Sexual Satisfaction

37% complete

## Your current sex life

This part of the survey uses a table of questions, view as separate questions instead?

**Q. 9** In the last year, have you experienced any of the following for a period of *3 months or longer*?

Please don't select more than 1 answer(s) per row.

| | Yes | No |
|---|---|---|
| Lacked interest in having sex | ☐ | ☐ |
| Lacked enjoyment in sex | ☐ | ☐ |
| Felt anxious during sex | ☐ | ☐ |
| Felt physical pain as a result of sex | ☐ | ☐ |
| Felt no excitement or arousal during sex | ☐ | ☐ |
| Did not reach a climax (experience an orgasm) or took a long time to reach a climax despite feeling excited/aroused | ☐ | ☐ |
| Reached climax (experienced an orgasm) more quickly than you would like | ☐ | ☐ |
| Had an uncomfortably dry vagina (women only) | ☐ | ☐ |
| Had trouble getting or keeping an erection (men only) | ☐ | ☐ |

**Q. 10** Have you had sex in the past year **and** been married or in a civil partnership or living with a partner as a couple for at least one year?

- ○ Yes
- ○ No

**Q. 11** Thinking about your relationship (or your last relationship), how much do you agree or disagree with the following statements. My partner and I share about the same level of interest in having sex

- ○ Agree Strongly
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Disagree Strongly

**Q. 12** My partner and I share the same sexual likes and dislikes

- ○ Agree Strongly
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Disagree Strongly

**Q. 13** My partner has experienced sexual difficulties in the last year

- ○ Agree Strongly
- ○ Agree
- ○ Neither Agree nor Disagree
- ○ Disagree
- ○ Disagree Strongly

**Q. 14** I feel emotionally close to my partner when we have sex together

- ○ Always
- ○ Most of the time
- ○ Sometimes
- ○ Not very often
- ○ Hardly ever

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University of Chester

# Armed Forces Survey on Stress and Sexual Satisfaction

50% complete

## Sex in the last 12 months

This part of the survey uses a table of questions, view as separate questions instead?

**Q. 15** Thinking about your sex life in the last year, how much do you agree or disagree with the following statements...

| | Agree Strongly | Agree | Neither Agree nor Disagree | Disagree | Disagree Strongly |
|---|---|---|---|---|---|
| I feel satisfied with my sex life | ☐ | ☐ | ☐ | ☐ | ☐ |
| I feel distressed or worried about my sex life | ☐ | ☐ | ☐ | ☐ | ☐ |
| I have avoided sex because of sexual difficulties, either my own or those of my partner | ☐ | ☐ | ☐ | ☐ | ☐ |

**Q. 16** Have you sought help or advice regarding your sex life from any of the following sources in the last year? Required

- ☐ Family member/friend
- ☐ Information and support sites on the internet
- ☐ Self-help books/Information leaflets
- ☐ Self-help groups
- ☐ Helpline
- ☐ GP/Family Doctor
- ☐ Sexual health/GUM/STI clinic
- ☐ Psychiatrist or psychologist
- ☐ Relationship counsellor
- ☐ Other type of clinic or doctor
- ☐ Have not sought any help
- ☐ Other

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# Armed Forces Survey on Stress and Sexual Satisfaction

62% complete

## How much do you think about sex?

This part of the survey uses a table of questions, view as separate questions instead?

**Q. 17** Please grade the following questions regarding how much you think about sex

Please don't select more than 1 answer(s) per row.

Please select at least 1 answer(s).

| | Not at all like me | Slightly like me | Mainly like me | Very much like me |
|---|---|---|---|---|
| My sexual appetite has gotten in the way of my relationships | ☐ | ☐ | ☐ | ☐ |
| My sexual thoughts and behaviours are causing problems in my life | ☐ | ☐ | ☐ | ☐ |
| My desires to have sex have disrupted my daily life | ☐ | ☐ | ☐ | ☐ |
| I sometimes fail to meet my commitments and responsibilities because of my sexual behaviours | ☐ | ☐ | ☐ | ☐ |
| I sometimes get so horny I could lose control | ☐ | ☐ | ☐ | ☐ |
| I find myself thinking about sex while at work | ☐ | ☐ | ☐ | ☐ |
| I feel that sexual thoughts and feelings are stronger than I am | ☐ | ☐ | ☐ | ☐ |
| I have to struggle to control my sexual thoughts and behaviour | ☐ | ☐ | ☐ | ☐ |
| I think about sex more than I would like to | ☐ | ☐ | ☐ | ☐ |
| It has been difficult for me to find sex partners who desire having sex as much as I want to | ☐ | ☐ | ☐ | ☐ |

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# Armed Forces Survey on Stress and Sexual Satisfaction

75% complete

## Sex and the internet

This part of the survey uses a table of questions, view as separate questions instead?

**Q. 18** Read each statement carefully. If the statement is mostly **true**, tick the true box. If the statement is mostly **false**, tick the false box

Please don't select more than 1 answer(s) per row.

| | True | False |
|---|---|---|
| I have some sexual sites bookmarked | ☐ | ☐ |
| I spend more than 5 hours per week using my computer for sexual pursuits | ☐ | ☐ |
| I have joined sexual sites to gain access to online sexual material | ☐ | ☐ |
| I have purchased sexual products online | ☐ | ☐ |
| I have searched for sexual material through an Internet search tool | ☐ | ☐ |
| I have spent more money for online sexual material than I planned | ☐ | ☐ |
| Internet sex has sometimes interfered with my certain aspects of my life | ☐ | ☐ |
| I have participated in sexually related chats | ☐ | ☐ |
| I have a sexualized username or nickname that I use on the Internet | ☐ | ☐ |
| I have masturbated while on the Internet | ☐ | ☐ |
| I have accessed sexual sites from other computers besides my home | ☐ | ☐ |
| No one knows I use my computer for sexual purposes | ☐ | ☐ |

| | | |
|---|---|---|
| I have tried to hide what is on my computer or monitor so others cannot see it | ☐ | ☐ |
| I have stayed up after midnight to access sexual material online | ☐ | ☐ |
| I use the Internet to experiment with different aspects of sexuality (e.g., bondage, homosexuality, anal sex, etc.) | ☐ | ☐ |
| I have my own website which contains some sexual material | ☐ | ☐ |
| I have made promises to myself to stop using the Internet for sexual purposes | ☐ | ☐ |
| I sometimes use cybersex as a reward for accomplishing something. (e.g., finishing a project, stressful day, etc.) | ☐ | ☐ |
| When I am unable to access sexual information online, I feel anxious, angry, or disappointed | ☐ | ☐ |
| I have increased the risks I take online (give out name and phone number, meet people offline, etc.) | ☐ | ☐ |
| I have punished myself when I use the Internet for sexual purposes (e.g., time-out from computer, cancel Internet subscription, etc.) | ☐ | ☐ |
| I have met face to face with someone I met online for romantic purposes | ☐ | ☐ |
| I use sexual humor and innuendo with others while online. | ☐ | ☐ |
| I have run across illegal sexual material while on the Internet | ☐ | ☐ |
| I believe I am an Internet sex addict | ☐ | ☐ |

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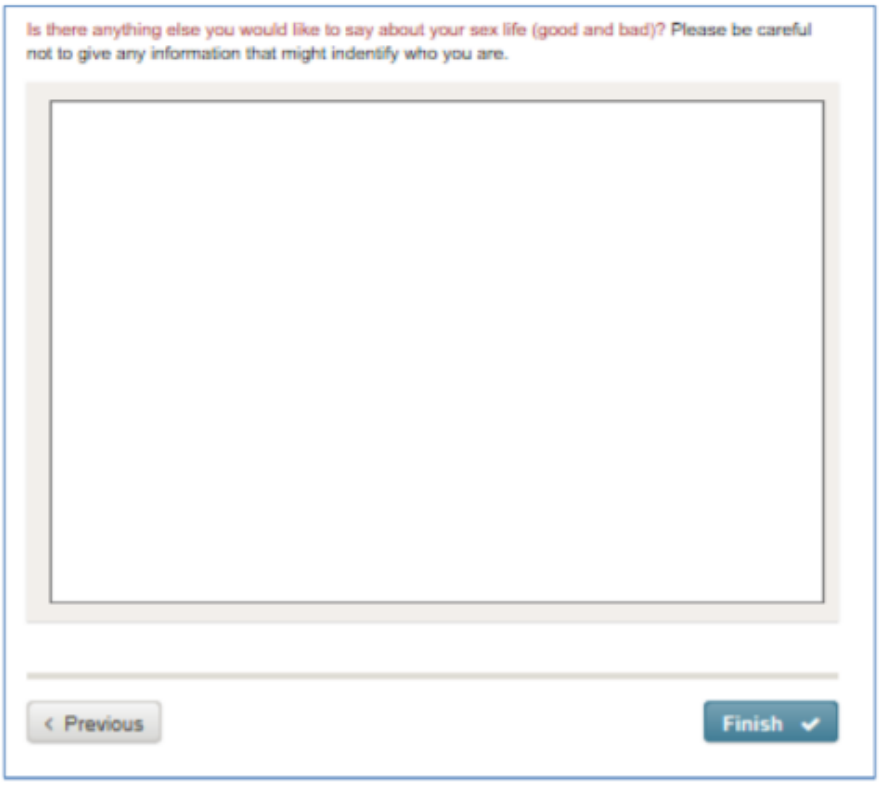
Armed Forces Survey on Stress and Sexual Satisfaction
87% complete
Finally...
Q. 19
Is there anything else you would like to say about how stress impacts on you or your relationship? Please be careful not to give any information that might indentify who you are.


Q. 20
Is there anything else you would like to say about your sex life (good and bad)? Please be careful not to give any information that might indentify who you are.
Previous
Finish

## 17.4 Appendix 4: MODREC independent panel 2017


**Independent Members of MODREC**

| | |
|---|---|
| **Dr Simon Kolstoe** | Lay member (Research Ethics)[1] |
| **Professor David Jones** | Bioethicist[2] |
| **Paul Affleck** | Lay member (Healthcare Ethics) |
| **Paul Andersen** | Lay member |
| **Gordon Coleman JP** | Lay member |
| **Clive Collett** | Lay member (Medical Ethics and Law) |
| **Julia Cons** | Lay member |
| **Dr Matt Davis** | Organisational Psychologist |
| **Professor Graham Devereux** | Professor of Respiratory Medicine |
| **Professor Chris Fry** | Professor of Physiology |
| **Diana Harvey** | Lay member |
| **Dr Jim House** | Reader in Environmental Physiology |
| **Dr Raymond Johnston** | Consultant Occupational Physician |
| **Dr Angus MacFadyen** | Statistician |
| **Professor Vassilios Papalois** | Professor in Transplantation Surgery |
| **Dr Michael Pegg** | Consultant Anaesthetist |
| **Dr Ian White** | Consultant Dermatologist |

**Official Members of MODREC**

| | |
|---|---|
| **Dr Paul Rice** | MOD Science & Technology Advisor |
| **Capt Paul Porter (RN)** | MOD Military Advisor |
| **Capt Lynn Thomas (RN)** | MOD Military Medical Advisor |

[1] Chairman
[2] Vice-Chairman

## 17.5 Appendix 5: Soldier Magazine article



HEALTH

# Let's talk about SEX

Problems in the bedroom aren't a topic for work... or are they?

SOLDIERS can – and do – joke about most things.

But along with many Brits, their conversations about sex probably don't go too far beyond amusing gossip or kiss-and-tells.

But what happens if you've got a problem with your sex life?

According to couples counselling service Relate, around a third of people have suffered from some sort of issue in the bedroom.

Here, sex therapist Jules Prentice (www.julesprentice.co.uk) – who specialises in treating Armed Forces personnel – suggests when it might be time to get help.

She is researching the link between stress and sexual behaviour in soldiers, and thinks more troops could benefit from speaking up.

Sex isn't consistent. In other words, you won't be a demigod in the bedroom every time.

There will be many things that impact on how good things feel for you and your partner...




Picture: Shutterstock

**6 months**

If you have been **struggling for longer** than this, **contact a professional**. Start by talking to your **medical officer** or, if you would rather go outside of the chain of command, a **specialist psychosexual therapist** or **relationship counsellor**. Often there is more than one underlying issue, so **avoid looking for quick-fix tablets** on the web. **Sex therapy** has a **high success rate** and while problems may feel **embarrassing to start with**, they can be solved. Soldiers just need to **find the confidence to talk**.

Wanting sex more or less than your partner is another common issue. But while problems like this are normal and don't necessarily cause long-term injury to a relationship, others may need specialist help. These include...

- Little desire to have sex
- Premature ejaculation (60 seconds or less)
- Being unable to keep an erection
- Orgasm disorders (being unable to climax or taking too long to do so)
- Painful sex
- Sex or porn addiction

Most people will experience issues like these on some level during their adult life, particularly during periods of high stress such as a return from operations. But they could also point to other health issues, so consider getting checked out.

**Find out more**
www.relate.org.uk/relationship-help/help-sex
afsac.co.uk
www.improvemysexlife.co.uk



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HEALTH | NEXT STEPS | SKILLS & DRILLS | KITBAG | EXPERIENCE

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